DEPARTMENT OF THE NAVY

NAVAL SEA SYSTEMS COMMAND
1333 ISAAC HULL AVE SE
WASHINGTON NAVY YARD DC 20376-0001

In reply refer to:
NAVSEAINST 4790.8B
SEA 04RM
November 13, 2003

NAVSEA INSTRUCTION 4790.8B

From: Commander, Naval Sea Systems Command

Subj: SHIPS' MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

Ref: (a) OPNAVINST 4790.4 Series
(b) CINCLANTFLT/CINCPACFLT 4790.3 Series, The Joint Fleet Maintenance Manual.
(c) NAVOP 009/98 (CNO 252203ZSEP98)
(d) NAVOP 010/98 (CNO 151947ZOCT98)

1. Purpose. To issue a revised Ships' Maintenance and Material Management (3-M) Manual which incorporates new and updated maintenance management policy. This instruction is a complete revision and should be reviewed in its entirety.

2. Cancellation

a. NAVSEAINST 4790.3B

b. NAVSEAINST 4790.8A

3. Scope. This instruction incorporates the requirements of references (a) and (b) and is applicable to all ships and shore station equipment under the cognizance of Naval Sea Systems Command (NAVSEA).

a. It does not apply to systems and equipment under the cognizance of Nuclear Power Directorate (NAVSEA 08), Director of Strategic Systems Program (DIRSSP) and aeronautical support equipment covered in the Naval Aviation Maintenance Program (NAMP). Ships, service craft and small boats manned by civilian crews are also exempted from this instruction unless approved by the Chief of Naval Operations (CNO) as specified in reference (a).

b. In addition to the change in appearance of this maintenance manual, there are significant changes in content to

comply with OPNAV policy, references (c) and (d) concerning shipboard maintenance.

c. Common support equipment used by both ship's force and naval aviation units shall have Planned Maintenance System support in accordance with this instruction.

d. Management of shipboard PMS and corrective maintenance is the responsibility of the Commanding Officer. It is imperative that Commanding Officers maintain a comprehensive program within their command to monitor the health of their maintenance system. To this end, an aggressive spot check/self assessment/evaluation program is vital to ensure quality maintenance is being performed. The number of spot checks required each week will vary between units and will be determined by the command's 3-M Manager. Periodic self-assessments/evaluations should be conducted by each Commanding Officer to determine the exact state of their programs.

4. Background. 3-M is designed to provide ships and applicable shore stations with a simple and standard means for planning, scheduling, controlling, and performing maintenance on all shipboard systems and equipment. The primary objective of 3-M is to manage shipboard maintenance in a manner, which will ensure maximum equipment and system operational readiness. Reference (a) contains OPNAV policy regarding 3-M and assigns responsibilities to NAVSEASYSCOM Field Activities, Systems Commands (SYSCOMS) and the Naval Medical Command for providing support.

5. Introduction. This manual has been developed in accordance with reference (a) and is designed to provide the user with a ready reference for all aspects concerning shipboard maintenance. It is divided into the following four sections:

a. Section I

(1) Chapter 1 Planned Maintenance System (PMS).

(2) Chapter 2 Initial Maintenance System Installation and Upgrade During Overhaul.

(3) Chapter 3 Organizational Level Maintenance Data System (MDS) Interface.

(4) Chapter 4 Ship Inactivation, Reactivation, Strike, or Transfer to Foreign Navies.

b. Section II

(1) Chapter 1 In-Service Inspections (INSURV) Procedures.

(2) Chapter 2 Assist Visits and TYCOM Assessments.

(3) Chapter 3 Submarine Performance Monitoring Team (PMT) Maintenance and Inspection Procedures.

c. Section III

(1) Chapter 1. Reports and Services Available from NAVSEALOGCEN.

d. Section IV

(1) Chapter 1. 3-M Training

e. Appendices:

A. Data Element Descriptions and Validation Specifications
B. Ships' 3-M Form Preparation Instructions
C. 3-M Automated Periodic Maintenance Program
D. 3-M Forms and Management Tools
E. List of Acronyms
F. Ships’ 3-M Points of Contact
G. Manual Preparation of PMS Schedules
H. Assignment of Responsibilities for the Planned Maintenance System
I. Alteration Management
J. Reliability-Centered Maintenance Certification Program

6. Submission of Changes to this Manual. Chief of Naval Operations (CNO) (N43) has final approval for all changes, corrections, or deviations made to this instruction (Ships' 3-M Manual). Naval Sea Systems Command (NAVSEA 04RM) is responsible for the management of these changes with Naval Sea Logistics Center (NAVSEALOGCEN) Mechanicsburg assisting with the research, coordination, and consolidation of all change recommendations. Naval Sea Logistics Center (NAVSEALOGCEN) Mechanicsburg, Board of Inspection and Survey (INSURV), and Naval Education Training Command (NETC), when necessary, shall provide to NAVSEA 04RM periodic updates of those portions of this manual under their cognizance to keep the manual current. Space and Naval Warfare Systems Center (SPAWARSYSCEN) Norfolk and Naval Sea Logistics Center (NAVSEALOGCEN) Mechanicsburg, when requested by

NAVSEASYSCOM, shall assist with changes affecting the system software, processing, or storage.

a. Manual Advance Change Notice (MACN): A change issued to correct policy or procedure, which severely affects maintenance, equipment, readiness, or ship/personnel safety. An approved MACN will be issued immediately by message without waiting for the next routine manual change. MACNs remain in effect until incorporated into the next routine manual change. A sequential number identifying the MACN, followed by the calendar year (e.g., MACN 1-00, MACN 2-00, MACN 3-00), will be assigned to each MACN issued.

b. Routine Manual Change: A change issued to enhance and correct policies and procedures not considered urgent. Changes in format or composition, changes made to clarify text, correct punctuation or spelling, update figure examples, or change codes are other examples considered routine. When approved and issued, a routine manual change cancels effective MACNs and consolidates them with routine change recommendations. These changes will be incorporated in the electronic document posted on the Web site (http://www.nslc.navsea.navy.mil/nslcprod/4790.nsf) and will be distributed via the next PMS Force Revision CD-ROM.

c. Urgent Change Recommendations: Any individual or activity having knowledge of a situation, policy, or procedure adversely affecting critical functions in the ships' 3-M Manual shall report this information by message to NAVSEASYSCOM (NAVSEA 04RM) and the chain of command with information copies to CNO (N43) and NAVSEALOGCEN Mechanicsburg. Upon receipt of an urgent change recommendation, NAVSEASYSCOM/NAVSEALOGCEN will research and coordinate the report and make a recommendation to CNO. If warranted, a MACN will be developed and issued.

d. Routine Change Recommendation: A routine change recommendation shall be submitted, with justification, by electronic medium to NAVSEASYSCOM (NAVSEA 04RM) at http://www.nslc.navsea.navy.mil/nslcprod/4790.nsf via the chain of command with a copy to CNO (N43). The format for submitting a routine change is on the web site. Following the chain of command review, NAVSEASYSCOM will forward the change recommendation(s) to NAVSEALOGCEN Mechanicsburg. Each recommendation will then be acknowledged by return email by NAVSEALOGCEN Mechanicsburg to the originator. All routine change recommendations will be researched, reviewed, validated, and coordinated with affective organizations by

NAVSEASYSCOM/NAVSEALOGCEN. Upon resolution, these recommendations become valid entries in the next manual change package.

e. When instructed by NAVSEASYSCOM, NAVSEALOGCEN Mechanicsburg will consolidate effective MACNs with resolved routine change recommendations and will be issued with the PMS Force Revision on CD-ROM.

f. A deviation request shall be submitted, with justification, when a need exists to depart from policies, procedures, and/or responsibilities as stated in OPNAVINST 4790.4D and in this instruction. Requests will be made in writing to NAVSEASYSCOM (NAVSEA 04RM) via the chain of command with a copy to CNO (N43) and NAVSEALOGCEN Mechanicsburg (N62). Receipt of all requests will be acknowledged following the chain of command review. Each situation or circumstances creating the need for deviation will be evaluated on an individual basis. NAVSEASYSCOM/NAVSEALOGCEN Mechanicsburg will coordinate with the involved activities to verify the need for the deviation and make the appropriate recommendation to CNO for approval. An approved request does not warrant a change to the manual.

A. W. LENGERICH
Vice Commander

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MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

SECTION I

Chapter 1

THE PLANNED MAINTENANCE SYSTEM (PMS)

SECTION I

Chapter 1

REFERENCES

REFERENCE	INSTRUCTION NO.	SUBJECT
(a)	OPNAVINST 5100.19 (SERIES)	NAVY OCCUPATIONAL SAFETY AND HEALTH PROGRAM FOR FORCES AFLOAT
(b)	OPNAVINST 5513 (SERIES)	DEPARTMENT OF THE NAVY CLASSIFICATION GUIDES
(c)	OPNAVINST 5230.24	NAVY AND MARINE CORPS POLICY ON THE USE OF COMPACT DISCTECHNOLOGY
(d)	NAVSEA S0404-AD-URM-010/TUM	TAG-OUT USERS MANUAL (TUM)
(e)	CINCLANTFLT/CINCPACFLT INST 4790.3	JOINT FLEET MAINTENANCE MANUAL

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CHAPTER 1

THE PLANNED MAINTENANCE SYSTEM (PMS)

1-1 PURPOSE

This chapter provides the 3-M System policy and guidelines in support of the Planned Maintenance System (PMS). PMS was developed to provide the organizational level with the tools to plan, schedule, and control planned maintenance effectively. The maintenance procedures developed in accordance with Reliability-Centered Maintenance (RCM) principles for planned maintenance are the minimum required to maintain equipment within specifications. Though standard in concept and procedure, PMS is flexible enough to be adjusted by the organization to be compatible with operational and other schedules.

1-2 SCOPE

PMS supersedes all previous planned or preventive maintenance systems or programs. Where a difference between the requirements and/or procedures of PMS and other technical publications or systems exists, PMS requirements will prevail. Differences shall be reported using PMS feedback reporting procedures.

Equipment not supported by PMS will continue to be maintained per existing procedures of the manufacturers, Systems Commands (SYSCOM) and/or Bureau of Medicine and Surgery's (BUMED) technical manuals, until PMS is developed and installed. The Fleet Technical Support Centers, Atlantic/Pacific (FTSCLANT/FTSCPAC) function as PMS coordinating activities and are responsible for the accountability and distribution of PMS documentation.

1-3 OBJECTIVE

The objective of Ship’s 3-M PMS is to maintain equipment within specifications through preventive maintenance, identifying and correcting potential problems before the equipment or system becomes inoperable. PMS provides:

a. Comprehensive procedures developed in accordance with RCM principles for planned maintenance of systems and equipment.

b. Minimum requirements for planned maintenance.

c. Scheduling and control of the performance of tasks.

d. Description of the methods, materials, tools, and personnel needed for maintenance.

e. Detection of hidden failures or malfunctions.

f. Test procedures to determine material readiness.

1-4 SHIPBOARD 3-M ORGANIZATION AND RESPONSIBILITIES

1-4.1 Commanding Officer

The Commanding Officer has overall responsibility for ensuring ship maintenance is accomplished following 3-M System and quality maintenance procedures and that the 3-M System functions effectively within the command. The Commanding Officer shall ensure appropriate personnel receive adequate formal 3-M training, and shall have frequent meetings with the Executive Officer and the 3-M System Coordinator to discuss 3-M System matters and to provide necessary guidance and coordination. The Commanding Officer shall conduct periodic checks to ensure that the 3-M System is functioning properly aboard ship. An effective maintenance program aboard ship must involve all levels of management, from the Work Center Supervisor up to and including the Commanding Officer. To this effect, the command must have an aggressive spot check program. It is mandatory that all levels of shipboard management know the material condition of the equipment aboard ship and the extent to which PMS is being accomplished. The Commanding Officer has the responsibility for establishing and conducting a spot check program at his/her command. The Commanding Officer shall ensure that all documentation deferring maintenance is reviewed and approved at a responsible level and that 3-M submissions are being made as required.

1-4.2 Executive Officer

The Executive Officer is the Ships' 3-M System manager and is responsible to the Commanding Officer for the overall management of the Ships' 3-M System program. The Executive Officer shall:

a. Be knowledgeable of current 3-M System policies and directives.

b. Chair periodic 3-M System meetings with Department Heads and the 3-M System Coordinator.

c. Monitor the operation of the 3-M System program to ensure compliance with current directives.

d. Brief the Commanding Officer at regular intervals on the status of 3-M.

e. Integrate 3-M System training into the ship's training and qualification program. Ensure personnel receive adequate and effective 3-M System training.

f. Act as final review officer for maintenance responsibility shifts between departments.

g. Ensure the effectiveness of the command 3-M spot check/self evaluation program.

1-4.3 3-M System Coordinator

The 3-M System Coordinator is the functional manager of the 3-M System and is responsible to the Executive Officer for the coordination and direct supervision of all administrative facets of the Ships' 3-M System program. This position will be assigned in writing as the PRIMARY DUTY of an officer, Chief Petty Officer or Petty Officer First Class (who has been assigned a secondary Navy Enlisted Classification (NEC) of 9517). As an exception to this policy, ships not having an allowance for a 3-M System Coordinator will assign these duties in writing as the most significant of collateral duties of an appropriately qualified officer, Chief Petty Officer or Petty Officer First Class. Office space of sufficient size is to be provided to permit effective performance of duties. Each command is responsible to ensure personnel assigned to the 3-M System Coordinator billet have adequate experience, training, and time to perform the responsibilities of the position effectively. The 3-M System Coordinator shall:

a. Serve as the principal 3-M System assistant to the Executive Officer.

b. Review 3-M documentation submissions for accuracy, completeness, and timeliness. Included in this duty is a requirement to ensure all required 3-M submissions are made, and that 3-M data returned for correction is promptly revised and resubmitted.

c. Ensure the Ships’ 3-M System program is kept current and any revisions are promptly distributed.

d. Advise, monitor, and assist Department Heads, Division Officers, Departmental 3-M System Assistants, and Work Center Supervisors in matters concerning the 3-M System.

e. Manage the functions of the 3-M System office. These functions are:

(1) Maintain a file of 3-M System directives, newsletters, notes, and correspondence containing current 3-M program information. Ensure distribution to Work Center personnel.

(2) Manage the PMS Master file that contains information relative to PMS requirements for specific equipment including the associated Equipment Guide Lists (EGLs).

(3) Ensure the command 3-M System training program, both onboard and off-ship, is adequate to meet the needs of the command. The 3-M System Coordinator should attend meetings of the periodic planning or readiness boards.

(4) Coordinate with Automated Data Processing (ADP) personnel for support of 3-M system software.

(5) Screen, serialize, and date all PMS feedback reports leaving the ship.

(6) Establish and maintain a file of outstanding PMS feedback reports and responses.

(7) Establish procedures for routing and/or explaining PMS changes to all concerned, and maintain a master accountability log of these changes.

(8) Maintain a file of configuration changes submitted to establish coverage on equipment not currently covered by PMS, until coverage is established.

(9) Ensure 3-M Maintenance Data System (MDS) data element validation is conducted in accordance with the 3-M validation specifications.

f. Screen 3-M documents for legibility and completeness. Forward 3-M documents to the designated data processing activity within 4 working days of Department Head approval or as operationally feasible.

g. Ensure the timely processing of Automated Shore Interface (ASI) configuration and logistic data.

h. Ensure timely up-line reporting of Current Ship's Maintenance Project maintenance transactions, ship's equipment file corrections and Coordinated Shipboard Allowance List (COSAL) feedback reports.

i. Supervise the command’s spot check/self evaluation program. Provide a weekly status report to the System manager.

1-4.4 Department Head

Each Department Head is responsible to the 3-M Manager for the effective operation of the 3-M System within the department. The Department Head will:

a. Supervise maintenance scheduling within the department and other departmental 3-M functions. Review and approve cycle schedules.

b. Review annotations of maintenance actions that were not fully accomplished during the quarter and close out Quarterly schedules.

c. Ensure departmental personnel are properly trained and motivated in the effective operation of the 3-M System.

d. Conduct periodic meetings with Division Officers and Work Center Supervisors and keep the Executive Officer informed of the status of the 3-M System within the department.

e. Ensure the following action is taken when equipment is added, deleted, or modified:

(1) Coordinate with the Supply Officer to ensure shipboard allowances, including tools, parts, materials, and test equipment needed for PMS are updated.

(2) Ensure all material deficiencies are properly and promptly documented.

(3) Ensure all required 3-M System documents are submitted to the 3-M System coordinator within 4 working days of the date of origination.

(4) Determine equipment Inactive Equipment Maintenance (IEM) status.

1-4.5 Departmental 3-M Assistant

Department Head’s may assign an officer, Chief Petty Officer or Petty Officer First Class, trained in and knowledgeable of the 3-M System, to provide help with the coordination and supervision of the department's 3-M program. This assignment will be made in writing.

1-4.6 Division Officer

The Division Officer is responsible to the Department Head and will be qualified in the 3-M System. The Division Officer assists in managing the maintenance required for the equipment within division responsibility. Division Officer responsibilities are:

a. Ensure 3-M documents generated within the division are complete, accurate, and promptly prepared and submitted.

b. Review and approve quarterly schedules. Ensure the divisional quarterly schedule is updated weekly.

c. Conduct spot-checks as directed by the Command’s policy to ensure required maintenance is being properly performed as prescribed by Maintenance Requirements Cards (MRCs).

d. Incorporate 3-M System training into the divisional training plan. Ensure maximum use of PMS as an aid in training personnel in maintenance procedures for equipment within the Work Center

e. Work in conjunction with the 3-M System Coordinator in matters concerning the 3-M program.

f. Meet frequently with divisional Work Center Supervisors and inform the Department Head each week of the status of the 3-M System within the division.

1-4.7 Group Supervisor

Shipboard divisions may have Chief Petty Officers who are responsible for multiple Work Centers. These Chief Petty Officers shall be referred to in this manual as "Group Supervisors" and will be responsible to the Division Officer for the proper performance of the 3-M System functions within their respective Work Centers. Group Supervisors, if assigned, will be assigned in writing.

1-4.8 Work Center Supervisor

Work Center Supervisors will be qualified and designated in writing. He/she is responsible to the Division Officer via the Group Supervisor, if applicable, for the effective operation of the 3-M System within his/her respective Work Center. Work Center Supervisor responsibilities are:

a. Maintain a detailed working knowledge of all equipment deficiencies within the Work Center. The Work Center Supervisor will use the Current Ship's Maintenance Plan (CSMP) as a daily working document for the scheduling of any maintenance actions not included on the PMS schedules.

b. Schedule weekly Work Center maintenance and supervise its proper accomplishment.

c. Ensure the status of Work Center planned maintenance is correctly reflected on the PMS schedules.

d. Ensure the Division Officer or Group Supervisor, if applicable, is advised of all 3-M System activity within the Work Center.

e. Maintain an adequate supply of 3-M System materials within the Work Center.

f. Ensure prompt reporting of all material deficiencies and completed maintenance actions as required.

g. Ensure all 3-M System documents submitted from the Work Center are correct, legible, and promptly prepared and submitted.

h. Ensure maximum use of PMS as an aid for training personnel in maintenance procedures for equipment within the Work Center.

i. Ensure 3-M System Work Center files, publications, MRC decks, Tag Guide Lists (TGLs), and EGLs are complete and current.

j. Review MRCs and promptly submit a PMS FBR whenever maintenance requirements are not fully understood, errors are believed to exist, maintenance requirements appear inadequate or excessive, additional coverage is needed, or performance of the maintenance requirement would cause a hazardous condition to exist.

k. Ensure PMS covers all equipment in the Work Center. Maintain an accurate and current List of Effective Pages (LOEP) by comparing the documentation with the actual equipment configuration. Submit PMS FBR when changes to the LOEP are required. Submit configuration change requests when appropriate.

l. Ensure programmed Periodic Maintenance Requirements (PMRs) scheduled for ship's force accomplishment are completed and reported in strict accordance with the PMR, if applicable.

m. Ensure proper testing and inspection of work done by outside activities prior to job acceptance.

n. Ensure delivery of test and measurement equipment and other portable support equipment to testing and calibration Work Centers as indicated on scheduling reports.

1-4.9 Maintenance Personnel

Maintenance personnel are responsible to the Work Center Supervisor. Their 3-M System duties include, but are not limited to the following:

a. Perform assigned scheduled maintenance requirements using MRCs, TGLs, and EGLs

b. as indicated by the weekly schedule.

c. When performing PMS, promptly notify the Work Center Supervisor when:

(1) Anything on an MRC is not fully understood, appears to be incorrect or cannot be accomplished as written.

(2) Tools, materials, etc., prescribed by the MRC are not available.

(3) Any doubt exists about capability, training, or experience to properly perform the maintenance requirement as prescribed.

(4) Factors exist which would make performance of the maintenance requirement unwise or dangerous (e.g., disassembly of equipment needed for operations, radiation when prohibited, situations causing safety hazard to exist, etc.)

(5) Equipment deficiencies or casualties are discovered.

d. Inform the Work Center Supervisor when planned maintenance requirements are completed and sign the accountability log. The Work Center Supervisor must be informed of any problems encountered under current schedules and/or MRCs.

e. When performing corrective maintenance (repair):

(1) Notify the Work Center Supervisor of the details of the corrective action. Particular attention must be given to the cause code and remarks/description entries.

(2) Report all deficiencies found to the Work Center Supervisor.

(3) Initiate or update all 3-M documents as required.

f. Prepare the documentation for reporting deferrals, completions, material usage, and PMS feedback for review by the Work Center Supervisor.

1-5 PMS FUNCTIONAL OPERATIONS

1-5.1 PMS Master File

The PMS Master File contains information relative to PMS requirements for specific equipment for which the command is responsible. The master contains, but is not limited to:

a. Additional instructions, information, and data provided to assist in implementation and accomplishment of PMS. Supplementary information includes changes received between force revisions (FR), information not contained on the master PMS CD-ROM, such as, classified MRCs, EGLs, and TGLs (if applicable). Also included are feedback reports and responses, and OPNAV 4790/CKs or Work Candidates affecting PMS until resolution.

b. List of Effective Pages (LOEP). The LOEP (Report No. PMS 5) (see Figure 1-1) provides a listing of the Maintenance Index Pages (MIPs) and system equipment not requiring PMS assigned to each Work Center. The LOEP is a part of the PMS Master file and contains:

(1) Report Date (Date LOEP produced).

(2) Force Revision (FR) Number.

(3) Type Commander (TYCOM).

(4) Unit (Ship's hull number, Unit Identification Code (UIC), and name); shore activity (UIC).

(5) Work Center (listing of Work Centers within each department).

(6) Maintenance Index Page (MIP) Number.

(7) Nomenclature (brief description of the system/equipment).

(8) Equipment Status. Codes that may be listed are:

(a) EGL (Equipment Guide List). Refer to paragraph 1-5.5 for additional information and use of the EGL.

(b) MRS (Maintenance Requirement Substantiated). Refer to paragraph 1-6.1 for classification definition.

(c) NIR (No Individual Requirement). Refer to paragraph 1-6.1 for classification definition.

(d) NMR (No Maintenance Requirement). Refer to paragraph 1-6.1 for classification definition.

(e) LATD (Lacks Adequate Technical Data). Refer to paragraph 1-6.1 for classification definition.

(f) Adds/Changes. A dash (-) denotes MIP issue changes included in the FR. A slash (/) denotes MIP additions distributed by special issue and not as part of the FR. A slash also denotes a change to a LOEP line entry; this change does not affect the MIP since the last FR.

Date: 02/11/00 Planned Maintenance System Page: 1
Time: 17:00:34 List of Effective Pages (PMS-5) Fr: 1-00

NAVAL AIR FORCE US ATLANTIC FLEET (DK-15)

Unit: CVN 0065 UIC: V03365 Work Center: AS40 USS ENTERPRISE

Add Chg	MIP	Nomenclature	RICs
-	3000/001-20	MISC SHIPBOARD ELECT EQUIP	
-	5832/002-10	LIFE SAVING EQUIPMENT	
	5832/005-79	LIFESAVING EQUIPMENT	
	5832/012-79	AUTO-INFLATABLE UTILITY LIFE PRESERVER	
	6300/001-99	PRESERVATION AND COVERINGS	
	6641/003-49	DCPO-MISCELLANEOUS ITEMS	
-	6641/004-10	DAMAGE CONTROL PETTY OFFICER (DCPO)	
-	6641/005-10	DCPO - CLIMATE CONTROL ITEMS	
	6641/018-49	SHIPBOARD CBR-D DEFENSE EQUIPMENT	

--- NMR - No Maintenance Required, Do Not Schedule
NMR-6641/007-57 HAZARDOUS MATERIAL SPILL KIT

Figure 1-1: LOEP Example

c. MIPs. MIPs are prepared and issued for each installed system/equipment for which PMS support has been established. MIPs are basic PMS reference documents. Each is an index of a complete set of Maintenance Requirement Cards (MRCs) applicable to a ship system, subsystem, or equipment. MIPs (see Figures 1-2, 1-3, and 1-4) contain the following information:

(1) SYSCOM MIP Control Number. Three SYSCOM MIP control numbering systems have been developed based on changing PMS philosophy and are currently in use. These are Conventional, Surface Missile System (SMS), and Reliability Centered Maintenance (RCM).

(a) For Conventional MIP cataloging, a four segment code is used. The first segment identifies the equipment group and may contain from one to four characters followed by a dash (-). The second segment identifies a specific subgroup/component number within an equipment group and may contain from one to four characters followed by a slash (/). The third segment identifies a distinct version within that equipment subgroup and may contain from one to three characters followed by a dash (-). The fourth segment contains two characters identifying the month and year the MIP was prepared

(in all SYSCOM MIP control numbers, 1 through 9 are used for the months January-September and letters A through C for the months of October-December; the final character is a number indicating the last digit of the year).

(b) For SMS MIP cataloging a three segment code is used. The first segment identifies the equipment group and contains seven alpha-numeric characters followed by a slash (/). The second segment identifies the equipment configuration and contains three characters [if first character is "U", this is unscheduled maintenance (UM); otherwise this is scheduled maintenance] followed by a dash (-). The third segment contains two characters which identify the month and year the MIP was prepared.

(c) For MIPs developed using the Reliability Centered Maintenance (RCM) analysis concept a three segment code is used. The first segment contains four numeric characters followed by a slash (/) and identifies the system or functional grouping of items on which the maintenance procedures provided by this MIP are to be performed. The numeric characters in this segment are normally the same as the Ship Work Authorization Boundary (SWAB) number. The second segment identifies the sequence of maintenance requirements development for this functional grouping or system, and may contain from one to three characters, followed by a dash (-). The third segment contains two characters which identify the month and year the MIP was prepared (see Figure 1-2)

(d) Preliminary MIPs are identified by a "P" code and number following the slash of the SYCOM MIP control number (see Figure 1-5). The third segment contains two characters which identify the month and year the MIP was prepared.

(2) Date. Preparation date of the MIP by month and year.

(3) Ship System, System, Subsystem, or Equipment. Description of equipment by noun name/AN nomenclature/Mark, Mod.

(4) Reference Publications. Those publications pertaining to the system, subsystem, or equipment.

(5) Configuration. Applicability of MIP to system/ equipment changed as described.

(6) Scheduling Aids. Amplifying instructions are noted in the maintenance requirement description block (see MIP Figures 1-2, 1-3, and 1-4).

(7) Other column and SYSCOM MRC Control Number:

(a) These codes are assigned for administrative use by FTSCLANT/FTSCPAC and may contain a one or two character code as follows:

Code	Description
H	Denotes a Calibration Maintenance Requirement developed under the cognizance of the COMNAVSEASYSCOM calibration program
K	Denotes a Maintenance Requirement and/or inspection developed under the cognizance of NAVSEA 07T, the Hull, Mechanical and Electrical Engineering Division. The “K” MRC’s are monitored by the submarine Performance Monitoring Team’s (PMT) for CBM analysis and failure identification.
M	Denotes a Maintenance Requirement developed under the cognizance of NSWC CD SSES Code 9161, for the Assessment of Equipment Condition (AEC) Program.
RC	Denotes a maintenance requirement on a Deep Submergence System (DSS) asset or system/equipment that is within the Scope of Certification (SOC) where Re-entry Control (REC) documentation is required. This MRC is Confidential.
N	Denotes a maintenance requirement on Moored Training Ship (MTS) systems/equipment that requires Moored Training Ship Support Yard (MTSSY) concurrence and NAVSEASYSCOM approval.
C	Denotes Confidential classification.
S	Denotes Secret classification.
X	Denotes a maintenance requirement on a Deep Submergence System (DSS) asset or system/equipment that is within the Scope of Certification (SOC) where no Re-entry Control (REC) documentation is required.
XR	Denotes a maintenance requirement on a Deep Submergence System (DSS) asset or system/equipment that is within the Scope of

Code	Description
	Certification (SOC) where no Re-entry Control (REC) documentation is required. This MRC is Confidential.

(b) SYSCOM MRC Control Number. Used to identify those MRCs listed on MIP. First two digits of the SYSCOM MRC Control Number underlined indicates a new and/or revised MRC.

(8) Maintenance Requirement. Brief description of each maintenance requirement.

(9) Periodicity Code. Delineates how frequently the maintenance requirement must be performed (refer to paragraph (1-5.4b).

(10) Rate (Skill Level). Identifies the recommended skill level of the person(s) considered capable of performing the maintenance requirements. Qualified personnel other than the rate/rating specified may be assigned. When a Navy Enlisted Classification (NEC) is assigned or DCPO, substitution of other personnel is not allowed with the exception of civilian personnel whose Position Description (PD) requires the performance of PMS. Civilian personnel must be qualified through the 3M Personnel Qualification Standard (PQS) and are authorized to perform maintenance actions associated with their PD. This includes the performance of Maintenance Requirement Cards (MRCs) that require specific NECs, providing they are qualified for the specific equipment through PQS or a Job Qualification Requirement (JQR).

(11) Man-Hours (MH). The average time, per equipment, per person, needed to perform the maintenance requirements, not including time for tool preparation and return, tag out, or time needed for removal and/or replacement of interference.

(12) Related Maintenance.

(a) Mandatory related maintenance; Maintenance requirements that must be accomplished concurrently with another maintenance requirement (e.g., M-3# (# symbol indicates mandatory related)). Mandatory related maintenance from another MIP is indicated as: IC-017/003:M-4#.

(b) Convenience related maintenance; Maintenance requirements that can be accomplished concurrently with another maintenance requirement (e.g., M-3 (# symbol is omitted)). Convenience related maintenance from another MIP is indicated as: EL-10:M-4.

(c) No related maintenance; This is indicated as "None."

(13) Inactive Equipment Maintenance (IEM). Reduced maintenance requirements for extended periods of equipment inactivity (refer to Section I Chapter 1 Paragraph 1-7).

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Distribution authorized to DOD components and DOD contractors only; Critical Technology; January 2000. Other requests for this document shall be referred to Naval Sea Systems Command (SEA 04M). Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

MIP CONTROL NUMBER: 5551/025-10 **Date:** January 2000

SHIP SYSTEM, SYSTEM, SUBSYSTEM, OR EQUIPMENT

Fire Extinguishing System
Fog Foam AFFF
5551

REFERENCE PUBLICATIONS

0941-LP-053-2010
0905-LP-130-1020

CONFIGURATION

SCHEDULING AIDS

1. Comply with anti-pollution regulation. Accomplish S-3 maintenance requirement only when ship is beyond 12 nautical miles of shore and preferably while underway. When within 3 nautical miles of shore or in port discharge to a tank, barge or to an authorized truck. In other cases when between 3 and 12 nautical miles overboard discharge is permitted with minimum speed of 10 knots.
2. Continue accomplishment of regularly scheduled PMS during inactive periods.
3. Review maintenance requirements. Omit MRC(s) which do not apply; no feedback report required.
4. Deviations on MRC procedures and valve alignment are allowed to suit ship system configuration. System diagrams on MRC cards are generic; valve numbering may not match ship specific plates.

* Mandatory scheduling required.

OTHER	MRC NO.		MAINTENANCE REQUIREMENT DESCRIPTION	PERIODICITY CODE	RATES	MAN HRS	RELATED MAINT
	A1 L0KN	N	1- Inspect proportioner station.	D-1	HT/DC2 HT/DC3	0.2 0.2	None
	A1 A5NX	N	1- Inspect proportioner.	W-1	HT/DC3	0.2	None
	43 L0K0	N	1- Inspect proportioner oil level.	M-1R	HT3	0.2	None
			NOTE: Accomplish monthly, or after each use. whichever occurs first.				
	35 L0KR	N	1- Clean, inspect, and lubricate monitor nozzle.	Q-1	HT3	1.0	None
	74 L0KS	N	1- Lubricate telescoping hangar sprinkler system flexible joints.	Q-2	EN/MM3 FN	0.5 0.5	None
	B6 BKND	N	1- Test operate AFFF proportioner.	S-1	HT/DC1 MM/EN/BT3 2FN	1.3 1.3 2.6	D-1*> S-3 R-5*>
	B6 BKNE	N	1- Test operate AFFF proportioner and hangar control stations.	S-2	HT/DC1 2HT/DC2 6FN	0.5 1.0 3.0	S-3 R-5*>
	A4 C2EK	N	1- Accomplish AFFF quantitative analysis.	S-3	DC/HT1 DC/HT3	0.7 0.4	D-1*> S-5R*>
	B6 BKNF	N	1- Clean, inspect, and lubricate solenoid-controlled pilot valves.	S-4	HT/DC3	1.0	None

Figure 1-2: HM&E MIP Example

Maintenance Effectiveness Review (MER) Analyzed 07/9/1999

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MIP CONTROL NUMBER: 7211/T0M-B0 **Date:** November 2000

SHIP SYSTEM, SYSTEM, SUBSYSTEM, OR EQUIPMENT

Missiles and Rockets
T0MAHAWK Cruise Missile Support Equipment
7211

REFERENCE PUBLICATIONS

SW820-AF-0MP-010

CONFIGURATION

This MIP includes support for surface and submarine configurations.
Includes Facsimiles: 08314/145
Incorporates Surface Maintenance Effectiveness Review (SURFMER) Cycle 24

SCHEDULING AIDS

1. Review MRCs, omit MRCs not applicable; no feedback report required.

** For scheduling purposes only; no MRC is provided.

Mandatory scheduling required.

OTHER	MRC NO.	MAINTENANCE REQUIREMENT DESCRIPTION	PERIODICITY CODE	RATES	MAN HRS	RELATED MAINT
		SUPPORT EQUIPMENT - COMMON	A-1			
		1. Calibrate H3599 Pressurizing Hose Assembly.	**>			
		1. Calibrate T3159 Pressurizing Gear Tester	20M-1 **>			
	B0 DVTR N	**SUPPORT EQUIPMENT - COMMON CABLE ADAPTER UMBILICAL ASSEMBLY**	M-1	TM3/GM3	0.5	None
		1. Inspect cable adapter umbilical assembly and components.				
		2. Perform continuity and insulation resistance tests.				
		NOTE: Accomplish MR1 prior to first use of the day. Accomplish MR2 as directed.				
	B0 DYEB N	**SUPPORT EQUIPMENT - SUBMARINE ADAPTER BOX ASSEMBLY PN JCM-17683**	M-2	TM3/GM3	0.5	None
		1. Inspect adapter box assembly and components.				
		2. Perform continuity and insulation resistance tests.				
		NOTE: Accomplish MR1 prior to first use of the day. Accomplish MR2 as directed.				

Figure 1-3: Ordnance MIP Example

Maintenance Effectiveness Review (MER) Analyzed February/25/1999

DISTRIBUTION STATEMENT D:

Distribution authorized to DOD components and DOD contractors only; Critical Technology; May 2001. Other requests for this document shall be referred to Naval Sea Systems Command (SEA 04M). Destroy by any method that will prevent disclosure of contents or reconstruction of the document.

MIP CONTROL NUMBER: 4911/001-51 **Date:** May 2001

SHIP SYSTEM, SYSTEM, SUBSYSTEM, OR EQUIPMENT

Portable Electronic Test
Equipment
4911

REFERENCE PUBLICATIONS

Applicable Test Equipment
Publications and Technical Manuals

CONFIGURATION

Incorporates SSDI System(s): 4911, Portable Electronic Test Equipment
Incorporates SWAB 4911: Portable Electronic Test Equipment

SCHEDULING AIDS

1. MRC 18M-1/R-1 provides Test Equipment operators evaluation guidelines for Shore and Shipboard Portable Test Equipment on a prior to calibration basis for calibrated equipment and a 18 month basis for no calibration required equipment.
2. Technical issues or failures detected during Test Equipment inspections or evaluations are corrected by scheduling the maintenance support delineated in MRC U-1 or U-2.
3. Safety checks for power cords will be performed as delineated in MRC U-2.
4. Review all MRCs. Omit requirements that are not applicable. No feedback report required.

OTHER	MRC NO.	MAINTENANCE REQUIREMENT DESCRIPTION	PERIODICITY CODE	RATES	MAN HRS	RELATED MAINT
	51 ELJ8 N	1. Inspect Test Equipment. 2. Inspect Power Cord. 3. Test Operate Test Equipment.	18M-1/R-1	ET2	0.1	None
		NOTE: For Test Equipment designated No Calibration Required (NCR) perform every 18 months; for equipment requiring calibration perform prior to submission for calibration.				
		UNSCHEDULED MAINTENANCE				
	39 DXU1 U	1. Service, Repair, or Route Test Equipment.	U-1	ET2 ETSN	0.2 0.5	None
	10 DXT0 U	1. Inspect Power Cords. 2. Measure Continuity of Power Cord Ground Conductor. 3. Measure Power Cord Insulation Resistance.	U-2	ETSN	0.1	None

INACTIVE EQUIPMENT MAINTENANCE

The following requirements will be scheduled when equipment is inactivated for periods of prolonged idleness.

None required

Figure 1-4: Electronic MIP Example

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MIP CONTROL NUMBER: 6628/P01-29 **Date:** February 1999

SHIP SYSTEM, SYSTEM, SUBSYSTEM, OR EQUIPMENT

Sewing Machine

6628

REFERENCE PUBLICATIONS

CONFIGURATION

SCHEDULING AIDS

1. This MIP is provided in the absence of a specific MIP/MRC for installed equipment to assure accountability of all maintainable equipment in PMS and to aid in scheduling. The maintenance requirements is established as representative for the typical system or equipment installed in the fleet. MRCs are not provided.
2. The listed maintenance requirements should be accomplished using procedures contained in applicable instructions, technical manuals or locally prepared procedures.
3. Delete maintenance requirements not applicable to installed equipment.

** For scheduling purposes only; no MRC is provided.

OTHER	MRC NO.	MAINTENANCE REQUIREMENT DESCRIPTION	PERIODICITY CODE	RATES	MAN HRS	RELATED MAINT
		1. Clean and lubricate exposed surfaces.	M-1 **>	FN/SN	0.2	None
		1. Apply lubrication through oil cups/caps.	M-2 **>	FN/SN	0.2	None
		1. Lubricate internal parts.	M-3 **>	FN/SN	0.2	None

INACTIVE EQUIPMENT MAINTENANCE

The following requirements will be scheduled when equipment is inactivated for periods of prolonged idleness.

Lay-Up Maintenance

1. Install protective covering.	LU-1 **>	

NOTE: Accomplish as required to protect equipment.

Periodic Maintenance

None

Start-Up Maintenance

1. Remove protective covering.	SU-1 **>	

NOTE: Accomplish if required.

Operational Test

None

Figure 1-5: An Example of A Preliminary MIP with MRCs

1-5.2 Use of the PMS Master File

The PMS Master File is maintained by the 3-M System Coordinator. Information contained in the master will pertain to all equipment for that organization. The organization's PMS requirements (MIPs/MRCs) for specific equipment, and additional supplementary information is provided by FTSCLANT/FTSCPAC on CD-ROM for the purpose of duplicate issue. The CD-ROM does not contain all of the PMS Master File data requirements (refer to paragraph 1-5.1). Any changes received between CD-ROM distributions must be retained on file until the changes are reflected on an updated CD.

1-5.3 Work Center PMS Manual

The Work Center PMS Manual reflects that portion of the PMS Master File that contains only the planned maintenance requirements applicable to a particular Work Center. It is designed to provide a ready reference of planned maintenance requirements for the Work Center Supervisor, and will be retained in the working area near the Weekly PMS Schedule.

1-5.4 Maintenance Requirement Card (MRC)

MRCs (see Figure 1-6) provide detailed procedures for performing maintenance requirements and describes who, what, how, and with what resources a specific requirement will be accomplished. MRCs contain the following information and instructions:

a. Date. This block contains the month and year when the MRC was prepared.

b. MRC Code. The code assigned to the MRC consists of two parts. The first part of the MRC code is the MIP series code. MRCs applicable to more than one MIP series will have each MIP series entered in this block. If more than four MIP series are applicable, reference will be made to a note in the procedure block. The second segment is the maintenance requirement periodicity code. The only authorized periodicities are as follows:

Periodicity Codes

D - Daily	Q - Quarterly
2D - Every 2nd day	S - Semiannually
3D - Every 3rd day	9M - Every 9th month
W - Weekly	A - Annually
2W - Every 2nd week	xM - Every x months

Periodicity Codes

3W - Every 3rd week	"x"= number of months
M - Monthly	2M - Every 2nd month

NOTE:

An asterisk (*) following the periodicity code indicates a Safety of Ship item and requires the ship/or user to comply with reference (e).

Maintenance requirements with calendar periodicity's greater than every 60 months may be developed for applicable ship classes in extended operability programs up to the length of the maintenance cycle. These periodicity's must be evenly divisible by six months (i.e., 66M, 72M, 78M, 84M, etc.).

Non-Calendar Periodicity

R - Situation Requirement
U - Unscheduled Maintenance

Inactive Equipment Maintenance (IEM)

LU - Lay-Up
PM - Periodic Maintenance
SU - Start-Up
OT - Operational Test

The periodicity code also includes a number for specific identification. When more than one MRC of the same periodicity exists in the same MRC set, the MRCs in most cases, will be numbered consecutively, e.g., "D-1," "D-2," "D-3," or "M-1," "M-2," etc. An existing MRC may be reapplied to a revised MIP even though the periodicity code of the reapplied MRC may not fall within the normally sequential numeric periodicity codes. For example, W-1, W-2, W-3, W-6 may appear on a MIP, where W-6 was an existing MRC that was reapplied to this equipment. Technically, valid MRCs will not be reprinted merely to change the periodicity code number. Non-sequential numbers will not affect scheduling or management control.

Dual periodicity codes are used when configurations or utility differences of a permanent nature exist between installations of the same system or equipment. A dual periodicity code may be assigned if no other aspect of the MRC requires modification to fit both periodicities. For example, equipment installed in an

SSN or in a surface unit may see daily use, while the same equipment installed in an SSBN may be idle for long periods of time, creating a situation where it is unnecessary to perform the described maintenance as frequently. In this case, a dual periodicity code such as M-1/Q-1 or Q-1/S-2 may be assigned. When a dual periodicity code is assigned, a note on the MIP and MRC will specify which periodicity code to schedule.

Situation requirement codes may be used with a calendar periodicity code in certain circumstances. These situations apply when both the situation and the calendar periodicity govern the scheduling of the requirement. Examples include:

(1) (M-1R): Monthly or every 600 operating hours, whichever occurs first.

(2) (W-3R): Weekly or after each use, whichever occurs first.

(3) (S-1R): Semiannually or during each upkeep period, which ever occurs first.

(4) (Q-1R): Quarterly or prior to getting underway, whichever occurs first.

(5) (R-1W): When a situation occurs, accomplish weekly.

When the periodicity code includes a situation requirement (e.g., R-1D, R-1W) a note of explanation is required in addition to the basic code. This note shall be the first entry in the procedure block.

Unscheduled maintenance requirements are those documented actions required to restore a system/equipment to an operational condition within predetermined tolerances or limitations. Unscheduled maintenance requirements evolve from system/equipment failures or other indications of system/equipment degradation, and include alignment, adjustment, and repair. Unscheduled maintenance procedures are described on unscheduled MRCs (see Figure 1-7), and listed on appropriate MIPs.

c. Location. This block contains the specific location, EGL, or TYCOM authorized check off list detailing equipment location.

d. Ship System, System, Subsystem, and Equipment. Identification of the ship system (functional group), system, subsystem, or equipment involved.

e. Rates. Identifies the recommended skill level of the person(s) considered capable of performing the maintenance requirements. Qualified personnel other than the rate/rating specified may be assigned. When an NEC is assigned, substitution of other personnel is not allowed with the exception of civilian personnel whose Position Description (PD) requires the performance of PMS. Civilian personnel must be qualified through the 3M Personnel Qualification Standard (PQS) and are authorized to perform maintenance actions associated with their PD. This includes the performance of Maintenance Requirement Cards (MRCs) that require specific NECs, providing they are qualified for the specific equipment through PQS or a Job Qualification Requirement (JQR).

f. Man-Hours (M/H). The average time per equipment required of each rate listed in rates block to perform the maintenance, listed in hours and tenths of an hour. When more than one person in the same rate is required and time requirements are equal, M/Hs listed are the sum of their requirements. When more than one person in the same rate is required and time requirements are not equal, M/Hs are listed for each person separately. Total M/H is the sum of all entries in the M/H block, not including time for tool preparation and return, tag out, or time needed for removal and/or replacement of interference.

g. Maintenance Requirement Description. A brief definition of the PMS action to be done.

h. Safety Precautions. A listing of those precautions and references which direct attention to possible hazards to personnel while doing maintenance.

i. Tools, Parts, Materials, Test Equipment.

(1) Standard PMS Item Name (SPIN) numbered Tools, Parts, Material, and Test Equipment. Test equipments, materials, parts, tools, and miscellaneous requirements necessary for the maintenance action are listed and categorized in order (see Figure 1-6). Items within the category are numbered and identified by the applicable SPIN number in brackets. Entries in this block can be referenced to the Standard PMS Materials Identification Guide (SPMIG) for stock

number identification. Stock numbers are also listed in the Hazardous Materials User's Guide (HMUG) for Personal Protective Equipment (PPE). The five basic categories are as follows:

(a) Category I-Test Equipment. Category I is used only for Portable Electric/Electronic Test Equipment (PEETE) listed in the Test Equipment Index (TEI), NAVSEA-TM-STOOO-AA-IDX-010/PEETE. All items are assigned a Sub-category (SCAT) code, which groups test equipment models having the same test capability into one code. Aboard ship, the Ships Portable Electrical/Electronics Test Equipment Requirements List (SPETERL) establishes allowances for PEETE within each SCAT code. MRC test equipment requirements are synchronized with the SPETERL.

(b) Category II-Materials. Materials include a wide range of administrative and housekeeping items, which may not be consumed entirely. Some consumable items (grease, oils, solvents, etc.) are consumed each time the maintenance action is performed, whereas, others (buckets, funnels, ladders, etc.) are not.

(c) Category III-Parts. Parts are defined as any items, which are an integral part of the equipment. For example: gaskets, mechanical seals, packing material, O-rings, filters, etc. The medium for identification of PMS part requirements in the Navy Supply System is the Allowance Parts List (APL). Ship unique repair parts are not listed in the SPMIG.

(d) Category IV-Tools. Category IV covers common hand tools of all types except "special tools."

(e) Category V-Miscellaneous. Category V covers all equipage items as well as any other special tools/materials not otherwise covered under categories I through IV. As a general rule, all items, which are identified and supported through Allowance Equipage Lists (AELs), will be considered Category V. Special tools are equipment-unique tools that are designed for a particular piece of equipment by the manufacturer. Such tools always have a manufacturer's part number and Commercial and Government Entity (CAGE). Per NAVSEASYSCOM/Naval Supply Systems Command (COMNAVSUPSYSCOM) policy, special tools will be listed on the APL and are, therefore, classified as repair parts. Equipage items are Category V even though some may be used as a tool; for example, jacking gear.

(2) Non-SPIN Tools, Parts, Materials, Test Equipment. Stock numbers, manufacturer's instructions, etc., for entries not covered by the SPIN/SPMIG or GPEETE Index are identified on the MRC.

j. Procedure. This block details the sequence of steps to be followed in performing the maintenance action. Reference to other approved procedures may be included on the MRC. As data may vary between ships, the MRC may contain blanks in which ship's company must supply the data necessary to properly do the work, e.g., pressure settings, temperature settings, brush tension, limiting speed, tolerances, and levels. The necessary data can generally be found in the equipment/system technical manual, ship's information book, ship's and equipment drawings, Naval Ships' Technical Manual, or Operational Sequencing System (OSS). If the data necessary to fill in the blanks is not available to ship's company, a PMS Feedback Report requesting the required data should be submitted.

Safety precautions will be listed prior to applicable steps and/or procedural actions. Specific categories are:

(1) **Warning: Death or injury may result if the operating/handling procedures and practices are not correctly followed.**

Warning text should be listed in the safety precautions' block and will be repeated preceding the procedure involved.

(2) **Caution: Damage to equipment may result if the operating procedures and practices, etc. are not correctly followed.**

Cautions are not listed in safety precautions block but will precede the instruction for the procedure involved.

The word "NOTE:" will precede procedural advisories.

k. SYSCOM MRC Control Number. This block contains the three segment code used in cataloging MRCs.

When MRCs are classified, an unclassified locator card (see Figure 1-8) is provided. The locator card duplicates the information in all of the MRC blocks except the procedures block, and includes one of the following statements:

"Maintenance procedure with the requirement is CONFIDENTIAL.
Maintenance Requirement Card is stowed in _____."

"Maintenance procedure with the requirement is SECRET.
Maintenance Requirement Card is stowed in _____."

The classified MRC is printed on pink stock with the classification indicated at the top and bottom of each page. Classified MRCs will be handled per reference (b). Refer to reference (c) for the handling procedures for classified information on compact discs.

Maintenance Effectiveness Review (MER) Analyzed 07/1/1998

DISTRIBUTION STATEMENT D:

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Date: June 2000 **MIP Series:** 3000 **Periodicity:** Q-2R

Location: Equipment Guide List Recommended

Ship System:	Miscellaneous Shipboard Electrical Equip and Installed Receptacles	3000
System:	Miscellaneous Shipboard Electrical Equip and Installed Receptacles	3000
SubSystem:	Miscellaneous Shipboard Electrical Equip and Installed Receptacles	
Equipment:	Miscellaneous Shipboard Electrical Equip and Installed Receptacles	

Rates	Man-Hours	Rates	Man-Hours	Rates	Man-Hours
EM2	0.1	EMFN	0.1		
Total Man-Hours:	0.2	**Elapsed Time:**	0.1		

MAINTENANCE REQUIREMENT DESCRIPTION

1. Inspect Portable Electrical Tool/Device Equipped with Two-Prong Plug.
2. Measure Insulation Resistance.

SAFETY PRECAUTIONS

1. Forces afloat comply with NAVOSH Program Manual for Forces Afloat, OPNAVINST 5100.19 series.
2. Tool test set (SCAT 4547) can produce voltages dangerous to life. Wear rubber gloves.
3. Ensure all tag-out procedures are in accordance with current shipboard instructions.

TOOLS, PARTS, MATERIALS, TEST EQUIPMENT

TEST EQUIPMENT

1. [00399] Electrical tool tester, SCAT 4547, 07239-235000
2. [00663] Megger, 500v, 100mohm, SCAT 4452
3. [00701] Multimeter, ac/dc, SCAT 4245

MATERIALS

1. [00096] Pen, ball-point
2. [01144] Tag, safety (if applicable)
3. [01657] Tag safety check
4. [02277] Pad, writing paper

MISCELLANEOUS

1. [00526] Gloves, electrical workers', 7500 volt maximum safe use, rubber

NOTE: Numbers in brackets can be referenced to Standard PMS Materials Identification Guide (SPMIG) for identification.

PROCEDURE

NOTE 1 : Accomplish MR1 before each use. Accomplish MR2 quarterly.

1. Inspect Portable Electrical Tool/Device Equipped with Two-Prong Plug.

NOTE 2 : Statement of Relevance - This task prevents damaged cable and loose terminal connections.

a. Position device switch to off, if applicable; remove attachment plug from receptacle.
b. Inspect case for cracked, loose, broken and missing parts, oil or foreign materials.
c. Extend device power cable; inspect sheath for cuts, tears, and abrasions. Ensure cable has no splices or exposed conductors.

Maintenance Requirement Card (MRC) Page 1 of 3 SYSCOM: 60 4ABG N
OPNAV 4790/85 (REV. 9-97)

Figure 1-6: A Maintenance Requirement Card (MRC)

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MIP CONTROL NUMBER: 4241/U02-B9 **Date:** November 1999

SHIP SYSTEM, SYSTEM, SUBSYSTEM, OR EQUIPMENT

AN/UQN-4,4A
Sonar Sounding Set
4241

REFERENCE PUBLICATIONS

NAVSEA 0910-LP-305-0500
NAVSEA 0967-411-9033 FOR AN/UQN-4
NAVSEA 0967-LP-586-9022 FOR AN/UQN-4A

CONFIGURATION

Incorporates SECAS System(s): 4241, Depth Sounding Equipment AN/UQN-4 AND AN/UQN-4A Field Changes 3 through 8

SCHEDULING AIDS

1. "U" MRCs are provided to assist in restoring or determining a system/equipments operational condition. Their use may be directed by a scheduled MRC, scheduling aid, system/equipment failure, or by FLEET/TYCOM/NAVSEA/Training Command representatives.
2. Review requirements of MRC U-7. Omit MRC U-7 if digital-to-analog converter, CV-2465/UQN-4 is not installed. No feedback report required.

OTHER	MRC NO.	MAINTENANCE REQUIREMENT DESCRIPTION	PERIO-DICITY CODE	RATES	MAN HRS	RELATED MAINT
		UNSCHEDULED MAINTENANCE				
	25 DWY7 U	1. Inspect stylI. 2. Test end-of-paper warning lamp. 3. Test transmitter overload circuit. 4. Test indicator lamps. 5. Test insulation resistance of T/R network diodes.	U-1	STG3 STGSN	0.5 0.5	None
	84 DWY0 U	1. Test interlock and energy discharge network.	U-4	STG2 STGSN	0.1 0.1	None
	27 DWZ2 U	1. Test and align TVG.	U-6	STG2 STGSN	0.5 0.5	None
	84 DWZ3 U	1. Test operate digital-to-analog converter, CV-2465/UQN-4.	U-7	STG3	0.2	None
	13 DWZ7 U	1. Measure transmitter output and pulse lengths. 2. Measure receiver sensitivity. 3. Test computer interface assembly 1A4A14.	U-13	STG2 STG3	2.4 2.4	None

INACTIVE EQUIPMENT MAINTENANCE

The following requirements will be scheduled when equipment is inactivated for periods of prolonged idleness.

None required

Figure 1-7: Example of an Unscheduled MIP

1-5.5 Equipment Guide List (EGL)

The EGL (OPNAV 4790/81, Figure 1-9) is used with a controlling MRC when the MRC applies to a number of identical items (i.e., motors, controllers, life rafts, valves, test equipment, small arms, etc.). Each listed item will have a unique identifier assigned. Each ship prepares its own EGLs.

The amount of time it takes to perform maintenance on each item should be considered to determine the number of items to include on an EGL. Each EGL should contain no more than a single day's work. If more than 1 day is required, separate EGLs are prepared for each, and numbered consecutively. MRC's with mandatory related maintenance should use the same EGL's to coordinate completion.

In some instances it may be unnecessary or impractical to list equipment on EGLs. For instance, if the equipment is listed on a TYCOM directed check-off list, a Calibration Recall Program, or Periodic Maintenance Requirement (PMR) is in effect, a notation of the applicable instruction in the location block of the MRC is all that is required.

In addition to the standard EGL, a limited number of specialized EGLs are available from FTSCLANT/FTSCPAC. A listing by applicable MIP/MRC may be obtained by PMS feedback report. Examples are the Damage Control Petty Officer (DCPO) compartment/space inspection EGL and the degaussing current EGLs.

1-5.6 Tag Guide List

The TGL (OPNAV 4790/107, Figure 1-10) contains the information necessary for equipment tag-out incidental to PMS accomplishment. The TGL contains the number of tags required, location of tags, position of the tagged item (open, shut, off, on, etc.) and permission or notification requirements. Each ship prepares its own TGLs. TGLs are prepared and used for laminated PMS Tag-out as regulated by reference (d).

1-5.7 Location and Use of MRCs, EGLs, and TGLs

A master EGL/TGL file shall be maintained. Each master file is to contain applicable EGLs and TGLs for every applicable MRC. A complete Work Center file of applicable MRCs with associated EGLs and TGLs will be located in each Work Center. Maintenance personnel will use these to perform assigned planned maintenance as follows:

a. Select the MRC scheduled for accomplishment from the Work Center file. Ensure that any associated EGLs and/or TGLs are also selected.

b. Obtain the required tools/parts/materials and calibrated test equipment listed on the MRC. EXCEPTION: Obtain hazardous material (HAZMAT) only when required to complete the maintenance.

c. Perform maintenance as stated on the MRC, observing safety precautions and notes as indicated.

d. Notify the Work Center Supervisor immediately whenever one or more of the following conditions exist:

(1) Any information on a MRC, EGL, or TGL is not fully understood or appears to be incorrect.

(2) Tools, parts, materials, or calibrated test equipment prescribed by the MRC are not available.

(3) Capability, training, or experience to properly perform the maintenance requirement (MR) as prescribed is doubted.

(4) Factors which would make performance of the MR, including the equipment tag-out unwise or dangerous (e.g., disassembly of equipment needed for operations, radiation when prohibited, situations causing safety hazards to exist, etc.) are identified.

(5) Equipment deficiencies or casualties are discovered.

(6) Any provisions or requirements on the MRC cannot be strictly adhered to or accomplished as prescribed.

e. Return the MRC and any associated EGLs/TGLs to the Work Center file upon completion of the requirement.

f. Report completed planned maintenance actions to the Work Center Supervisor who will update the Weekly PMS Schedule. Maintenance actions not fully completed will be reported to the Work Center Supervisor for rescheduling if still within periodicity, or listed as to the reason why it was not completed, as applicable. However, if material deficiencies or

casualties which are unrelated to that maintenance requirement are discovered, the maintenance requirement can be X'd off (provided the MR was fully completed), but the discrepancy must be reported as specified in Section I Chapter 3. MRCs conducted by outside activities are listed on ship's force MIPs and are indicated by a letter code designation in the "Other" column (refer to paragraph 1-5.1c). These MRCs are to be maintained in the PMS Master File and in the applicable Work Center file for informational purposes, to facilitate the scheduling of maintenance actions related to ship visits and should be documented as complete when the check has been completed. EGLs and TGLs are not required for MRCs assigned to outside activities.

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Date: January 1996 **MIP Series:** 4731 **Periodicity:** Q-4

Location:

Ship System: Countermeasures 470
System: Torpedo Decoys 473
SubSystem: AN/SLQ-25 NIXIE 4731
Equipment: AN/SLQ-25 Torpedo Countermeasures Set 4731

Rates	Man-Hours	Rates	Man-Hours	Rates	Man-Hours
ST62	1.6	ST6SN	0.6		
Total Man-Hours:	2.2	**Elapsed Time:**	1.6		

MAINTENANCE REQUIREMENT DESCRIPTION

1. Test system performance.

SAFETY PRECAUTIONS

1. Forces afloat comply with NAVOSH Program Manual for Forces Afloat, OPNAVINST 5100.19 series; shore activities comply with NAVOSH Program Manual, OPNAVINST 5100.23 series.

TOOLS, PARTS, MATERIALS, TEST EQUIPMENT

TEST EQUIPMENT

1. [01533] Voltmeter, freq selective, SCAT 4220 (RYCOM 6041) (or equivalent)
2. [01537] Voltmeter, true rms, 1%, SCAT 4205 (BALLANTINE 320A) (or equivalent)
3. [02770] Oscilloscope, 100mhz, 4ns, SCAT 4308, AN/USM-425 (AN/USM-425 or equivalent) (only if EC-19 Installed)

TOOLS

1. [01174] Screwdriver, cross tip, 6", # 3 phillips
2. [01198] Screwdriver, flat tip, 6", general purpose

MISCELLANEOUS

1. [01327] Stopwatch, Type 1, 3 position, 30 min reg
2. Cable, test, 4', BNC to BNC, RG-58C/U (2)

NOTE: Numbers in brackets can be referenced to Standard PMS Materials Identification Guide (SPMIG) for identification.
Maintenance procedure with this requirement is CONFIDENTIAL.
Maintenance Requirement Card is stowed in _____.

PROCEDURE

Maintenance Requirement Card (MRC) Page 1 of 1 SYSCOM: 16 ELR2 N
OPNAV 4790/85 (REV. 9-97)

Figure 1-8: Single-Page Locator Card for Classified MRC

EQUIPMENT GUIDE LIST
OPNAV 4790/81 (2-76)
S/N 0107-LF-047-9405

PAGE	OF					

MIP NO. *(Less last 2 characters)* _____ MRC PERIODICITY _____

EQUIPMENT NAME NOMENCLATURE	SERIAL NO. QUANTITY	LOCATION	APPLICABLE DATA AS REQUIRED BY MRC

Figure 1-9: Equipment Guide List (EGL)

TAG GUIDE LIST

OPNAV 4790/107 (10-80) S/N 0107-LF-047-9545

MIP & MRC NO. _____

EQUIPMENT _____

NUMBER OF TAGS PER EQUIP		
NOTIFICATION DATA		
COLD IRON	INPORT STEAMING	UNDERWAY

EQUIPMENT SERIAL NO.	SERIAL NO. SWITCH/VALVE	LOCATION OF SWITCH/VALVE	POSITION OF TAGGED ITEM	AMPLIFICATION DATA

VERIFICATION/APPROVAL SIGNATURES			
WCS	DIV OFF	DEPT HEAD	CO

Figure 1-10: Tag Guide List

1-5.8 Shipboard Changes to MRCs

a. The only modifications which shipboard personnel may make to the MRCs are as follows:

(1) Tools, Parts, Materials, and Test Equipment.

(a) Common hand tools and basic housekeeping items may be appropriately substituted or added, by the Work Center Supervisor, without changing the MRC.

(b) Approved parts or materials substitutes from the supply system, technical manual, or MIL-SPEC, etc., may be used.

(c) Test equipment or certified tools, which meet or exceed the SCAT code requirements may be used.

NOTE:

It must be ensured that substitutions satisfy both the basic maintenance and safety requirements of the MRC. If there is any doubt, a PMS Feedback Report (FBR) should be submitted specifying substitution desired and reason.

b. In the "Procedure" block, Work Center Supervisors may line out the non-applicable line items (alternate procedures) that do not pertain to current equipment/configuration when the step is followed with the words "if applicable" or a note identifying steps to be omitted. As these changes are Work Center specific, submission of a FBR is not required.

c. If a change to a maintenance procedure or periodicity for a specific MRC appears necessary or desirable, a FBR suggesting the change is to be forwarded to the FTSCLANT/FTSCPAC. MRCs affected shall be fully identified by citing the SYSCOM MRC control number, subsystem, equipment, the applicable MRC code, and complete SYSCOM MIP control number. Recommended changes should include all information available.

d. Each command has the prerogative to increase the frequency of performance of specified planned maintenance actions to meet local conditions.

e. There may be instances where an obvious typographical error has been made on the MRC (example: Turn Switch to ON;

however, switch may already be ON and card should read Turn Switch to OFF). This type of error should not prevent the scheduling or performance of maintenance.

NOTE:

Extreme caution shall be taken when reviewing MRCs for this type of error. Errors must be obvious typographical errors, and a PMS FBR must be submitted immediately when discovered. Do not permanently alter the MRC until authorized by the applicable SYSCOM/ISEA/FTSCLANT/FTSCPAC.

1-5.9 PMS Trend Data

If directed by the Fleet Commanders (FLTCs) and subordinate commanders, trend data records will be established and maintained for designated equipment. The purpose of this data is to record readings or other historical data over a continuing period of time (e.g., bearing clearances, resistance test readings, etc.).

1-5.10 Preliminary PMS Documentation

Preliminary documents provide new or changed procedures that have not been given a final engineering validation. This documentation falls into two categories.

a. Preliminary MIPs without MRCs. Preliminary MIPs without MRCs are forwarded by the SYSCOMs via the FTSCs and provide guidance in maintaining equipment not covered by PMS. Their purpose is to aid the ship in identifying and scheduling maintenance. The ship is responsible for developing interim MRC procedures based on experience and applicable technical manuals in support of these MIPs. Before scheduling preliminary MIP requirements, the Work Center Supervisor and the Department Head shall verify their applicability to installed equipment. Preliminary MIPs are identified by a "P" code and number following the slash of the SYSCOM MIP control number.

b. Preliminary MIPs with MRCs. Preliminary MIPs with MRCs are provided by the SYSCOMs via FTSCLANT/FTSCPAC to provide the ship with advance coverage for use while the MIPs/MRCs are undergoing final technical review. Preliminary MIPs are identified by a "P" code and number following the slash of the SYSCOM MIP control number. Preliminary MIPs/MRCs are technically reviewed/approved by the cognizant SYSCOMs/BUMED. The approved MRCs will be provided following approval with the next update.

1-5.11 Advance Change Notices (ACNs).

PMS ACNs are authorizations for and a record of changes to an existing MIP or MRC, or the addition of a new MRC. Applicable SYSCOMs/BUMED (Cognizant Design Activity or In-Service Engineering Agent (ISEA)) will issue message pen changes correcting errors in PMS documentation that affect the safety of personnel or can cause possible damage to equipment in the fleet. Pen corrections are interim measures only for urgently required changes. The FTSCs will distribute the revised MIP/MRC reflecting the changes indicated by the message to all affected MIP holders. Shipboard accountability for ACNs shall be accomplished by annotating the PMS Master File and the Work Center PMS Manual. The ACN reflecting the change must be kept on file until receipt of revised documentation. Types of changes indicated on PMS ACNs include:

a. Periodicity of accomplishment;

b. Deletion or modification of an existing maintenance requirement;

c. Addition or modification of a MRC procedure note to clarify the context or description of a procedure step;

d. Procedure step modification to correct maintenance technical data, e.g., frequency, pressures, voltages, current, decibels, resistance values, clearance, test data, etc;

e. Addition, deletion, or modification of an MRC procedure step which significantly improves the technical accuracy of the task.

f. Addition or modification to the list of tools, parts, materials and test equipment.

1-5.11.1 Control and Tracking of ACNs.

Control and tracking of each ACN will be accomplished in the following manner:

a. A PMS ACN will refer to a specific MIP and MRC, the location of the revision will be indicated by a vertical block change bar outside the border of the ACN. A new MRC will be provided for each MRC affected by the ACN.

b. Each PMS ACN is serialized. The serial number consists of the originating activity code, MIP number, serial number, log number and date.

c. FTSCLANT/FTSCPAC will maintain accountability of all outstanding ACNs by MIP/MRC. The revised MIP will incorporate superseded ACNs.

The 3-M System Coordinator shall record the receipt of each ACN and distribute a copy to the appropriate Work Center files.

1-5.12 PMS Schedules

The use of SKED Version 2.1 or higher for PMS Scheduling constitutes full compliance with all administrative provisions of this chapter. Guidance for use of SKED is provided in the Help menus and Wizards associated with SKED. Guidance for the manual preparation of PMS Schedules is contained in Appendix G. PMS Schedules are categorized as cycle, quarterly, and weekly schedules.

1-5.12.1 Cycle PMS Schedule

The Cycle PMS Schedule (Figure 1-11) displays the planned maintenance requirements to be performed over long periods of time in the maintenance life cycle of the ship. The PMS Cycle will be determined by using Inter-Deployment Training Cycles (IDTCs). Each PMS Cycle, for ships, will consist of three IDTCs. The Cycle PMS Schedule shall also be reset after a Docking Availability. Multi-month requirements shall be scheduled relative to the first quarter after IDTC reset. A shore command’s PMS Cycle shall be 20 quarters. Multiple month maintenance requirements will have the quarter indicated in parentheses, 30M-1(4)(14), for the periodicity. Any multiple month checks that have not been accomplished in this PMS Cycle period will be scheduled during the first quarter of the new Cycle PMS Schedule.

1-5.12.1.1 Content of Cycle PMS Schedule

The following information is to be included in the block/column indicated:

a. Ship. This block contains the ship's name and hull number.

b. Work Center. This block contains the applicable Work Center designator, and page number (e.g., "(pg. 1 of 1)".

c. Schedule Quarter after Overhaul as Indicated. This block contains annual, semiannual, multiple-month (4M and greater) maintenance requirements. Mandatory related maintenance checks, which are to be completed during the quarter are indicated by the pound sign symbol "#". The # sign, placed next to a primary check, indicates that there is mandatory related maintenance associated with that maintenance requirement. The MIP scheduling aids must be consulted when drafting the Quarterly Schedule to determine what mandatory checks apply and need to be scheduled.

d. Approval Signature/Date. This block contains the Department Head's signature and the date the Cycle schedule was approved.

NOTE:

A printed Cycle schedule with Department Head’s signature and date is not required when using SKED. The Department Head finalizing the schedule constitutes the approval signature.

e. MIP. This block contains a listing of the MIP codes for the PMS requirements to be scheduled on the Cycle schedule.

f. Component. This block identifies the related system, subsystems, or equipment of the scheduled PMS requirements.

g. Each Quarter. This block contains MRs with periodicities of 2W, 3W, M, and 2M, and any associated related maintenance checks (indicated by the "#" symbol). It also includes all situation requirements regardless of periodicity to be completed during each quarter.

1-5.12.2 Quarterly PMS Schedule

The Quarterly PMS Schedule (Figure 1-12) displays the Work Center's PMS requirements to be performed during a specific 3-month period. This schedule, updated weekly, provides a ready reference to the current status of PMS for each Work Center. SKED performs this update based upon the Weekly Schedule. This schedule represents a divisional directive and, once approved, may be changed only with Division Officer approval.

1-5.12.2.1 Content of Quarterly PMS Schedule

a. Space is provided for entering the Work Center, year, quarter after overhaul, Division Officer’s signature, date prepared, and months covered.

NOTE:

A printed Quarterly schedule with Division Officer’s signature and date is not required when using SKED. The Division Officer finalizing the schedule constitutes the approval signature.

b. Thirteen columns (15 columns for SSBNs), one for each week in the quarter, are used to schedule maintenance requirements. Columns are provided for the complete MIP number and any PMS requirements that may require to be rescheduled in the next quarter.

c. Use of the Quarterly PMS Schedule

The Quarterly PMS Schedule serves as a directive for Work Center Supervisors for scheduling weekly maintenance.

1-5.12.3 Weekly PMS Schedule

The Weekly PMS Schedule (Figure 1-13) displays the planned maintenance scheduled for accomplishment in a given Work Center during a specific week. The Weekly PMS Schedule provides the Work Center Supervisor a management tool for planning maintenance requirements. A Weekly PMS Schedule created in SKED by the Work Center Supervisor is used to assign and monitor the accomplishment of required PMS tasks by Work Center personnel. The creation of the Weekly PMS Schedule also produces a 13 Week Accountability log. When using SKED, there is no requirement to print the PMS Weekly Schedule.

1-5.12.3.1 Content of Weekly PMS Schedule

The following items will be included in the weekly schedule:

a. Work Center code.

b. Date of current week.

c. MIP number minus the date code.

d. A list of applicable components.

e. Maintenance responsibilities assigned, by name.

f. The periodicity codes of maintenance requirements to be performed, listed by columns for each day.

g. Outstanding repairs and applicable PMS checks due in next four weeks.

1-5.12.4 13-Week Accountability Log

The Work Center Supervisor shall maintain a 13-Week Accountability Log. SKED will produce this log. This log will be printed and posted in each Work Center for maintenance personnel to obtain PMS assignments. It will consist of the last 13 completed weeks of maintenance and the current week. At the end of the week the Division Officer will review and sign the log. The following information will be contained in the accountability log:

a. The printed name, date, and legal signature of the maintenance person actually accomplishing the maintenance. The maintenance person shall sign this log immediately upon completion of the maintenance action. If multiple maintenance persons are assigned to a single maintenance action, the Petty Officer in Charge or the most senior person assigned must sign the 13 Week Accountability Log.

b. Detailed reasons for non-accomplishment of maintenance requirements should be entered by the maintenance person in the 13 Week Accountability Log immediately after informing the Work Center Supervisor of the non-accomplishment of the maintenance action.

NOTE:

Material deficiencies or casualties discovered, which are unrelated to that maintenance requirement, must be reported to the Work Center Supervisor.

1-5.12.5 Annotation of Weekly PMS Schedule

The Weekly PMS Schedule must be updated with the status of Maintenance Requirements. The Work Center Supervisor will annotate the Weekly PMS Schedule as follows:

X = Fully Accomplished. The symbol "X" is the mark used to indicate completion of a maintenance requirement. Fully accomplished MRCs will be X'd off separately on the quarterly schedule. Ensure that situation requirements which were accomplished are added and X'd off separately.

O = Not Fully Accomplished. A circled requirement indicates a requirement that was not accomplished or only partially accomplished following the applicable MRC. A circle with a short arrow will be used to indicate rescheduled MRs.

¢ = Satisfied by Higher Level Test. Upon successful completion of the system (higher) level test, an "X" is marked over the system level test requirement listed on the quarterly schedule. The symbol is used to mark scheduled equipment or lower level MRC requirements that have been satisfied by the successful completion of the parent system test. A brief explanation of the parent system test (including the MIP, who performed the maintenance, and when) is required on the reverse side of the quarterly schedule. (The MRCs that are so satisfied are identified on the applicable system level test MIP.)

If not fully accomplished, the maintenance requirement is circled and rescheduled. PMS requirements (other than daily checks) accomplished during the prescribed week, but not on the day specified, shall be considered completed on schedule and X'd off.

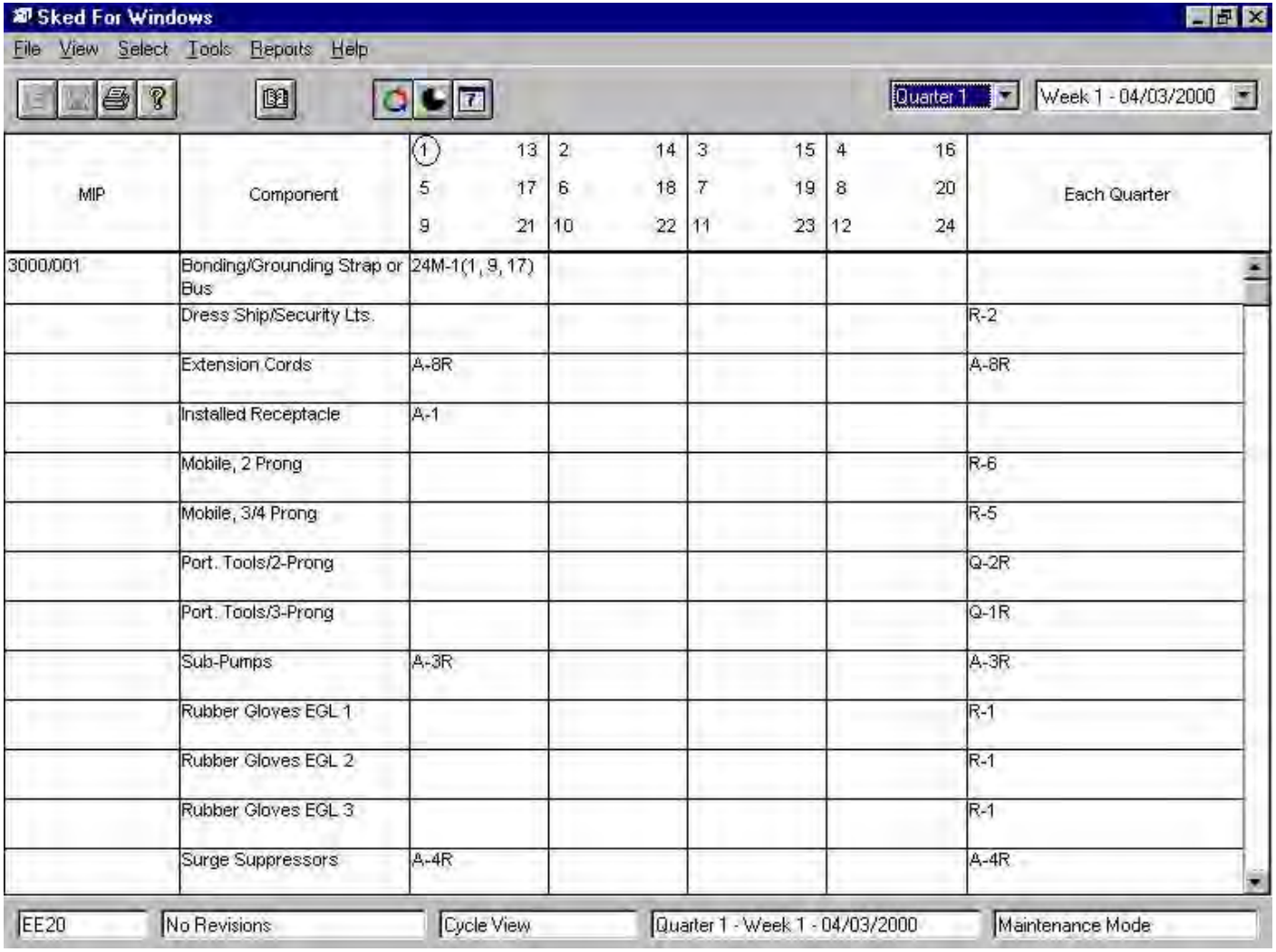

Figure 1-11: Cycle PMS Schedule

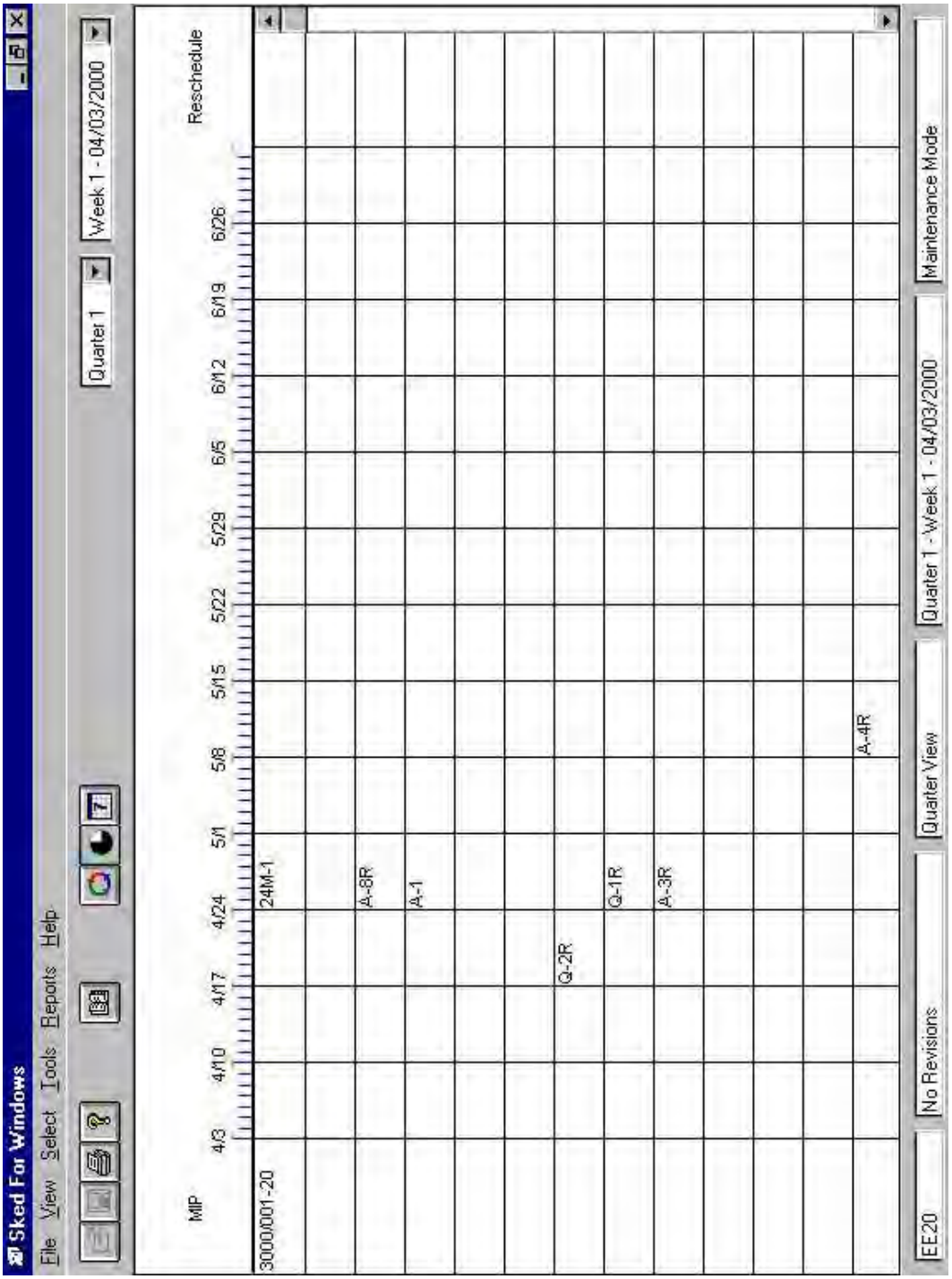

Figure 1-12: Quarterly PMS Schedule

1-5.13 Shift of Maintenance Responsibility

Individual ships sometimes consider it desirable or necessary to shift maintenance responsibility from one Work Center to another, to combine two or more existing Work Centers, or to split an existing Work Center. Requests for changes of PMS maintenance responsibility should not be submitted to accommodate a temporary situation such as short-term assignment of two Work Centers to one supervisor. Transfer of maintenance responsibility from one Work Center to another requires changes in LOEP and PMS distribution, and can represent a considerable administrative burden.

The following factors should be carefully considered before submitting such requests:

a. Composition of Work Centers by size and ratings.

b. Scope of maintenance responsibilities.

c. Work Center workload.

d. Ease of administration of a Work Center as a cohesive maintenance group.

e. Importance of Work Center grouping to equipment maintenance responsibilities, PMS scheduling, MDS reporting, and Current Ship Maintenance Project (CSMP) listings.

When changes in maintenance responsibility are considered necessary, the following procedures apply:

a. Submit a PMS FBR (category B). Indicate from which Work Center(s) equipment is to be deleted and to which it is to be transferred. All FBRs requesting a shift of maintenance responsibility must be signed by the Executive Officer.

b. Work Center or equipment changes will be reported via the OPNAV 4790/CK or Work Candidate (as applicable) or equipment file configuration update. All outstanding equipment deficiencies for the equipment, which was moved, will also be transferred to the new Work Center.

c. After the FBR is signed by the Executive Officer, the following actions are authorized prior to receipt of the Force Revision (FR) reflecting the change:

(1) Delete equipment from the present PMS master file, LOEP and Work Center manuals. Add the equipment to the appropriate LOEP of the department and Work Center receiving the responsibility. Annotate the FBR serial number on the affected line item on the LOEPs. The PMS master file must contain a record of deleted equipment until the change is reflected in the next update.

(2) Transfer the affected MIPs, MRCs, and EGLs to the Work Center receiving maintenance responsibility. Prepare new TGLs as necessary.

(3) In SKED, delete the equipment from the current schedule. For manually generated PMS schedules, line out equipment on the present Cycle PMS Schedule with one single line and annotate the FBR serial number reflecting that the maintenance responsibility has been transferred (identify receiving Work Center and date of transfer). Make the same change on the Quarterly and Weekly PMS Schedules.

(4) In SKED, add the equipment on the current schedule. For manually generated PMS schedules, add equipment on the Cycle PMS Schedule of the Work Center receiving the maintenance responsibility and date the schedule at the extreme left. Schedule MRs on the Cycle PMS Schedule. Make the same changes on the Quarterly and Weekly PMS Schedules.

Figure 1-13: Weekly PMS Schedule

1-5.14 Scheduling Exceptions

Upon review of a MIP, it may be determined that certain maintenance requirements are not applicable to equipment/systems. In such instances, if authorized by a "scheduling aid" entry on the MIP, strike a line through the requirement on the MIP.

If not authorized by a scheduling aid, submit a PMS Feedback Report identifying the reason for non-applicability. No change shall be made to the MIP until authorized; however, performance of affected MRs will be discontinued. Document the non-accomplishment of the MR on the quarterly close out.

There are instances in which a MIP includes a requirement for more than one Work Center to participate in the performance of specified maintenance actions. When this occurs, a decision is required by the command concerned as to whether the MIP will be split or will be scheduled singly by one Work Center and work accomplished through coordination by Work Center Supervisors. There must be a necessity for a complete requirement to be accomplished by the other Work Center before splitting the MIP. If the MIP is split, the following procedures apply:

a. Submit a category B PMS FBR reporting the decision to split the maintenance responsibility. If the ship cannot generate its own additional copies of the required MIPs and MRCs, include a request for the additional PMS documentation to ensure an adequate number for the Work Center/departments.

b. The FBR must be approved by the Executive Officer.

c. Distribute the MIPs, MRCs, and EGLs to the Work Center concerned. Insert the MIPs into the PMS Work Center files, and add the equipment to the applicable LOEPs. Tailor the MIPs to each Work Center by lining out on the MIP the MRCs for which the Work Center is not responsible.

d. If the Cycle PMS Schedule for each affected Work Center does not reflect the equipment, add the equipment to the schedule. Schedule only the periodicity codes that pertain to that Work Center. For manually developed PMS Schedules, make the appropriate changes to the Quarterly and Weekly PMS Schedules.

Concurrent scheduling and accomplishment of PMS MRs which require system/equipment deactivation can improve system

availability by reducing the time it would be unavailable to perform its functions if PMS tasks were scheduled and accomplished sequentially. Scheduling of maintenance by a lead Work Center can avoid excessive system non-availability due to PMS requirements, which may occur if several Work Centers separately schedule the PMS for which they are responsible. It may be necessary and desirable for the Executive Officer to provide overall guidance and for the 3-M System Coordinator and Department Heads to coordinate the scheduling and accomplishment of PMS performed by more than one Work Center or department.

1-5.15 PMS Feedback Report (FBR) Form (OPNAV 4790)

The PMS FBR is used to notify FTSCLANT/FTSCPAC of matters related to PMS. The FBR form is composed of an original and four copies. Instructions for preparation and submission of the form are printed on the back of the last copy. While the FBR will provide initial PMS coverage and changes, submission of an OPNAV 4790/CK form is required to initiate the logistic support change process (see Section I Chapter 3). Automated forms for FBR submission, may be transmitted electronically, via the SKED Feedback Report Wizard (preferred) or the FTSC website at https://ftsc.navy.mil/pmsdb/tfbrform.cfm or the Anchor Desk website at http://anchordesk.navy.mil, click on Enter the Portal, Submit a deficiency report and PMS Technical Feedback form.

1-5.15.1 PMS Feedback Reports

There are three types of FBRs: Category A, Category B, and Urgent.

a. Category A - This type of FBR is non-technical in nature and is intended to meet PMS needs which do not require technical review, including changes in Work Centers. Category A FBRs are submitted to request classified or other PMS documentation, which cannot be obtained locally (see Figure 1-14). With the ship's master PMS requirements on compact disk (CD-ROM), replacement copies will be generated with the print-on-demand capability.

b. Category B - This type of FBR (Figure 1-15) is technical in nature, and is used to report:

(1) Technical discrepancies inhibiting PMS performance.

(2) Shift of maintenance responsibilities.

NOTE:

Figure 1-16 shows the reverse side of the FBR form and provides the instructions for preparation and submission.

c. Urgent FBR – An FBR will be considered URGENT when the reason for submission of a PMS FBR involves safety of personnel, ship, or potential for damage to equipment and relates to the technical requirements of PMS. Urgent FBRs will be forwarded by naval message containing a PMS Feedback Serial Number, to both FTSCLANT and FTSCPAC, info cognizant SYSCOM/BUMED/NAVSAFECEN/ TYCOM. The message shall describe the unsafe procedures or conditions, and shall identify the MIP/MRC involved (Figure 1-17).

1-5.15.2 FBR Processing/Response

1-5.15.2.1 3-M System Coordinator shall:

a. Screen PMS FBRs to ensure they are complete and that resolution is not feasible on board the ship. Ensure MIP has been reviewed for scheduling aids and information pertaining to deleting MRCs.

b. Serialize and forward within four days of receipt. The FBR serial number will consist of two parts separated by a dash: a four-digit sequence number and the last two digits of the calendar year. The date will change on 1 January of each year, but the number sequence will continue, i.e., 4241-99, 4242-00. The sequence number will start with 1 and not repeat until 9999 has been reached.

c. Maintain accountability of all PMS FBRs submitted and action taken by the FTSCs, SYSCOM, etc, until corrected PMS documentation is received. The FBR accountability record may be disposed of upon receipt of a feedback reply rejecting the suggested change. SKED also contains a FBR accountability and tracking function that can be used in place of paper records.

d. Ensure the originator of each FBR and all other applicable Work Centers are kept appraised of action taken on the FBR, and that all materials and information received in response are distributed accordingly. Ensure that the originating Work Center and other applicable Work Center Supervisors implement the changes/corrections received.

1-5.15.2.2 FTSCLANT/FTSCPAC Actions (See Appendix H for additional information)

a. Category A FBRs for replacement of missing classified MIPs/MRCs shall receive expeditious handling by the FTSCs.

b. Category B FBRs where resolution by FTSCLANT/FTSCPAC is possible, will be answered by electronic means, if possible. Paper responses will be a last resort.

c. Related changes in documentation shall be reflected in the LOEP provided with the subsequent Force Revision.

d. Category B FBRs, where resolution by FTSCLANT/FTSCPAC is not possible, shall be processed as follows:

(1) The FBR will be electronically forwarded to the applicable technical review activity for resolution.

(2) FTSCLANT/FTSCPAC will maintain the PMS MIS copy.

(3) An electronic notice will be provided the ship identifying what action is pending and by whom.

e. Related changes in documentation shall be reflected in the LOEP provided with a subsequent revision.

1-5.15.2.3 Technical Review Activities.

The cognizant Technical Review Activity receiving technical FBRs for resolution shall analyze, categorize, and process these FBRs as follows:

a. URGENT Feedback Reports. (See paragraph 1-5.15.1c) SYSCOM/BUMED/NAVSAFECEN technical review activities shall provide a preliminary response to the originator by message, info applicable TYCOMs, SYSCOM/BUMED, NAVSAFECEN Norfolk, and FTSCLANT and FTSCPAC within 1 working day of receipt. TYCOM shall provide copies of Urgent FBR resolutions to all holders of the affected MIPs/MRCs.

b. Routine Technical Feedback Reports. The technical review activity shall provide the resolution to the question asked in the FBR to FTSCLANT/FTSCPAC by direct entry into the PMS MIS or other electronic means. The response may contain corrections to PMS documentation incorporating approved revised

procedures, and superseding documentation held by the ship, or an explanation of the reasons for non-concurrence or deferring concurrence with the ship's recommendation or request. Electronic responses are preferred over paper. FTSCLANT/FTSCPAC will provide an electronic response to the originator.

NAVSEA has established a goal of providing the answer to a TFBR in one day. While it is realized that some TFBRs will require more extensive research, the majority of TFBRs received can and should be answered in one day.

When the technical review activity concurs with a PMS FBR, FTSCLANT/FTSCPAC will provide all holders of the affected MIP/MRC with updated PMS in the next force revision.

REPORT SYMBOL OPNAV 4790-4

SEE INSTRUCTIONS ON BACK OF GREEN

FROM (SHIP NAME AND HULL NUMBER)	SERIAL #
USS NEVERWAS FFG 999	1074-00 DATE 09 MAR 00

TO
[X] **NAVAL SEA SUPPORT CENTER** PACIFIC **(Category A)**
[ ] **TYPE COMMANDER (Category B)**

SUBJECT: PLANNED MAINTENANCE SYSTEM FEEDBACK REPORT

SYSTEM, SUB-SYSTEM, OR COMPONENT	APL/CID/AN NO./MK. MOD
SONAR RECEIVING SET	AN/SQR-18A(V)1
SYSCOM MIP CONTROL NUMBER	**SYSCOM MRC CONTROL NUMBER**
4621/23-23	VARIOUS

DESCRIPTION OF PROBLEM

CATEGORY A	CATEGORY B
[X] **MIP/MRC REPLACEMENT**	[ ] **TECHNICAL** [ ] **TYCOM ASSISTANCE** [ ] **OTHER (Specify)**

REMARKS

REQUEST TWO COPIES EACH OF FOLLOWING CLASSIFIED MRCs:

72 EZV9 N

C9 EZV0 N

10 EZW5 N

TOTAL OF 6 MRCs REQUESTED. ADEQUATE SECURE STORAGE PER OPNAVINST 5110.1H IS AVAILABLE.

ORIGINATOR & WORK CENTER CODE	DIV. OFFICER
ET (SW) Johnson EE01	*LT Linda Dawson*
DEPT. HEAD	**3-M COORDINATOR**
I. M. Daboss, CDR, USN	*GMC (SW) Glen Hayes*

Originator do not write below. For TYCOM use only.

TYCOM [ ] CONCUR [ ] DO NOT CONCUR [ ] TAKES ACTION [ ] PASSES FOR ACTION

TYCOM REP SIGNATURE	DATE

OPNAV 4790/7B (Rev. 9-89)
S/N 0107-LF-007-8000

ACTION COPY

PAGE *1* OF *1*

EDITION OF 3-84 MAY BE USED UNTIL EXHAUSTED

Figure 1-14: PMS Feedback Report, Category A

REPORT SYMBOL OPNAV 4790-4

SEE INSTRUCTIONS ON BACK OF GREEN

FROM (SHIP NAME AND HULL NUMBER)	SERIAL #
USS NEVERWAS (FFG-999)	0011-00
	DATE 04 APR 00

TO

☐ **NAVAL SEA SUPPORT CENTER** _____ **(Category A)**

☒ **TYPE COMMANDER (Category B)**

SUBJECT: PLANNED MAINTENANCE SYSTEM FEEDBACK REPORT

SYSTEM, SUB-SYSTEM, OR COMPONENT	APL/CID/AN NO./MK. MO
Auto Ballast Comp Sys	
SYSCOM MIP CONTROL NUMBER	**SYSCOM MRC CONTROL NUMBER**
F-37/2-60	T 44 E12F N

DESCRIPTION OF PROBLEM

CATEGORY A	CATEGORY B
☐ **MIP/MRC REPLACEMENT**	☒ **TECHNICAL** ☐ **TYCOM ASSISTANCE** ☐ **OTHER (Specify)**

REMARKS

Before testing setting on relief valve, we need calibration steps for Leslie-Matic controller. This step in not contained on the present MRC. This ship does not have any pub or tech manual showing the steps that should be taken in checking the Leslie-Matic controller for accuracy.

ORIGINATOR & WORK CENTER CODE	DIV. OFFICER
P. R. Saunders EB14	*Lt W. M. Smith*
DEPT. HEAD	3-M COORDINATOR
D. R. Campbell	*Michael Manlove*

Originator do not write below. For TYCOM use only.

TYCOM ☐ CONCUR ☐ DO NOT CONCUR ☐ TAKES ACTION ☐ PASSES FOR ACTION

TYCOM REP SIGNATURE	DATE

OPNAV 4790/7B (Rev. 9-89)
S/N 0107-LF-007-8000

ACTION COPY

PAGE 1 OF 1

EDITION OF 3-84 MAY BE USED UNTIL EXHAUSTED

Figure 1-15: PMS Feedback Report Category B

1. ORIGINATOR

a. Typewritten copies are preferred, however, handprinted copies are acceptable. Use ballpoint pen and ensure all copies are legible.

b. EQUIPMENT IDENTIFICATION: Fill in titled blocks that apply. Give as much information that can be determined. Ensure that correct APL number is used for hull, mechanical or electrical equipment or electronic/weapons equipment which does not have an Army-Navy number or mark/mod designation.

c. DESCRIPTION OF PROBLEM: Check the appropriate box.

Category A

(1) MIP/MRC REPLACEMENT: Ensure that PMS documentation request is current in accordance with latest SFR. For missing MIPs/MRCs, give SYSCOM control numbers when they can be determined. If SYSCOM control numbers cannot be determined, provide as much nameplate data as can be obtained. When ordering a variety of missing/worn MIPs/MRCs, the subject section shall be left blank.

Category B

(2) TECHNICAL:

(a) Identify specific discrepancy discovered in PMS by MRC control number, step number, etc.

(b) For publication discrepancies identify publication by number, volume, revision date/number, change number, page, paragraph and or figure as appropriate.

THIS FORM WILL NOT BE USED TO ORDER PUBLICATIONS.

(3) TYCOM ASSISTANCE: Includes clarification of 1-M instructions and other matters related to PMS administration.

(4) OTHER: Identify in detail any problem not covered by (1) through (3) above. Shifts of maintenance responsibility will be reported under this item. Ensure that all Work Centers involved in the change are identified by Work Center code. Approval by the Executive Officer will be shown in the "Remarks".

d. REMARKS: Provide brief, but complete, description of problem or requirement. Executive Officer indicate approval of maintenance responsibility shift by endorsement. Use additional forms if more space is required. Mark additional forms, "page 2 of 2", "page 2 of 3", etc. Staple additional forms behind basic form.

e. ORIGINATOR IDENTIFICATION: Sign and insert Work Center code in appropriate space.

2. DIVISION OFFICER: Review for accuracy and completeness and sign in the space provided.

3. DEPARTMENT HEAD: Review for accuracy and completeness and sign in the space provided.

4. 1-M COORDINATOR:

a. Serialize, date and sign in the appropriate spaces.

b. ROUTING INSTRUCTIONS: For Category "A" FBRs, forward the white and yellow copies to the appropriate NAVSEACEN and the pink copy to the TYCOM. For Category "B" FBRs, forward the white, yellow and pink copies to the TYCOM. Retain blue copy in suspense file. Return green copy to the originator.

Figure 1-16: FBR Preparation

```
ADMINISTRATIVE MESSAGE
  PRIORITY
  P 112259ZJAN00
  FM ORIGINATING ACTIVITY//CODE//
  TO FTSCLANT NORFOLK VA//CODE//
  FTSCPAC SAN DIEGO CA//CODE//
  INFO COMNAVSEASYSCOM WASHINGTON DC//CODE//
  NAVSAFECEN NORFOLK VA//CODE//
  COGNIZANT TYPE COMMANDER//CODE//
  CHAIN OF COMMAND//CODE//
  BT
  UNCLAS //N04790//
  MSGID/GENADMIN/ORIGINATING ACTIVITY//
  SUBJ/URGENT PMS FBR SERIAL 1827-00//
  RMKS/
  1.  SYSCOM MIP CONTROL NR 5553/026-43.
  2.  MRC CODE 5553 60M-2R.
  3.  SYSCOM MRC CONTROL NR 218QZPN.
  4.  IAW SHIPALT 961-00670K, PHNSY HAS INSTALLED HALON SYSTEMS
  IN JP-5 PMP RM AND 3 GTG RM.  SYSTEMS HAVE 1 1/2 INCH FLEX
  HOSES INSTALLED ON DISCHARGE SIDE.  PER INGALLS PLANNING YARD
  LIAISON ACTION RECORD 670-990-3513, HOSES ARE TO BE HYDRO
  TESTED TO 1600 PSI (135 PERCENT DESIGN PRESSURE).
  5.  PER MRC 5553/026-43 60M-2R, 1 1/2 INCH FLEX HOSES ARE TO
  BE HYDRO TESTED TO 1750 PSI (150 PERCENT DESIGN PRESSURE).
  6.  CONDITIONS UNSAFE TO PERSONNEL AND EQUIPMENT MAY EXIST IF
  GAS CHARGED, HIGH PRESSURE SYSTEM IS NOT TESTED TO PROPER
  SPECIFICATIONS.
  7.  REQUEST TEST PSI CONFIRMATION/RESOLUTION AND CORRECTIVE
  ACTION REQUIRED.//
  BT
```

Figure 1-17: Urgent Feedback Report (Sample)

1-5.16 PMS Force Revision

After PMS has been installed, it is necessary to ensure that the installed PMS packages are periodically updated to reflect changes in system/equipment and package configuration and to provide PMS documentation (new issues and revisions).

1-5.16.1 Work Center Verification.

It is important that all MIPs/MRCs received by a Work Center are carefully reviewed by a senior petty officer to verify:

a. That the equipment identified on the MIP is in fact installed in/assigned to the Work Center.

b. That the MIP/MRC is applicable to the system/ equipment (APL, correct manufacturer, model, MK-MOD, alteration, etc.) that is installed.

c. That the requirements/provisions (procedures, tools, skills, man-hours, elapsed time) listed on the MRC are correct, adequate, safe, feasible, logical, reasonable, simply stated, and not excessive.

1-5.16.2 Revision Package Contents

Each PMS Force Revision package contains:

a. Automated Library Issue Document (ALID) that identifies:

(1) the applicable force revision

(2) applicable ship hull number

(3) superseded MIPs

(4) superseding MIPs

(5) applicable Work Center codes

(6) quantities

(7) added/deleted MIPs.

b. The List of Effective Pages (LOEP), Report PMS 5 (see Figure 1-1).

c. PMS MIP to Work Center File, Report PMS 4 (see Figure 1-18). This report provides the ship accountability and control of current MIP to Work Center assignments.

d. Technical Feedback Status Report, Report PMS 22 (Figure 1-19). This report contains outstanding/completed Technical Feedback Reports received by FTSCLANT/FTSCPAC. Category A FBRs will not be reflected on this report.

1-5.16.3 Revision Procedures

Force revision procedures are as follows:

a. PMS revision package will be addressed "Attention: 3-M System Coordinator."

b. The Force Revision number is listed in the upper right-hand corner of the Automated Library Issue Document (ALID). This number will be the same for all ships and will identify each Force Revision in the calendar year. For example, the first package issued in calendar year 2000 was assigned the number 1-00.

c. Commands having no additions or changes will receive a copy of the ALID with a statement, "No Ship’s Master File changes reflected by this Force Revision."

d. Ships in overhaul will receive Force Revision packages. Updating procedures for PMS packages during overhaul are contained in Section I Chapter 2.

e. Shipboard procedures for implementation of force revisions are as follows:

(1) Force Revisions are normally effective on the first Monday of the quarter and are mailed prior to the beginning of a quarter to allow adequate preparation prior to the scheduled implementation date. When a Force Revision is not received in time to permit implementation on the first Monday of the quarter, the actual date of implementation will be designated by the Executive Officer. When a Force Revision is received, only safety-related PMS updates are required to be implemented within 2 to 5 working days of receipt, with the remainder of the PMS updates being implemented on the effective date for the Force Revision. Safety-related changes will be marked with a vertical line on the PMS Quarterly Schedule for the day directed by the Executive Officer for command wide

implementation. The line should be labeled "INSTALLED REVISION".

(2) The 3-M System Coordinator shall enter the Force Revision number from the ALID in the Change Service Accountability Log (Figure 1-20) prior to routing the change documentation to work centers. Two examples of PMS Change Documentation Routing Memorandum are shown in Figures 1-21 and 1-22. The Change Service Accountability Log is explained further in paragraph 1-5.17.

(3) The Work Center Supervisor, upon receipt of the change document from the 3-M system coordinator, shall take the following actions:

(a) LOEP Changes

(b) When a MIP is superseded in its entirety, line out the complete number of the superseded MIP, enter the number of the new MIP, and annotate with the revision serial number.

(c) When a MIP number is partially updated (e.g., revision date change, and preliminary to permanent MIP), line out only that portion of the MIP number, which is changed, and write in the updated portion of the MIP number.

(d) When a new MIP is issued, enter the new MIP number and applicable equipment information at the end of the current LOEP for the applicable Work Center.

(e) Changes resulting from force revisions. Replace the superseded LOEP in the PMS Master and Work Center files. SKED users will update their schedules using the CD-ROM. Steps (f) and (g) apply to paper users. All changes will be made in ink.

(f) Each will compare existing cycle schedules with the LOEP to identify new, deleted, or revised MIPs. New MIPs will be added to the bottom of cycle schedules. Deleted MIPs will be lined out and the force revision number noted by the line out.

(g) Revised MIPs will be compared with old MIPs to identify changes in periodicity. Required changes will be shown on the cycle schedule.

(h) MIP Changes

1. Remove superseded MIPs from Work Center files add new MIPs. (If an updated PMS Master File on compact disk is received as a replacement to the PMS Master, the new MIPs will already be included.)

2. Destroy superseded MIPs. Compact disks will be destroyed as directed by reference (c).

(i) MRC Changes

1. Remove superseded MRCs from MRC files; add new MRCs. If an updated PMS Master File is received, the new MRCs will already be included.

2. Prepare/revise associated EGLs and TGLs as necessary. TGL revisions will require the Commanding Officer's approval.

3. Destroy superseded documentation.

(j) Update the Cycle PMS Schedule

1. Update the Cycle PMS Schedule by using the FR CD-ROM and the SKED program.

(k) Prepare a new Quarterly PMS Schedule.

(l) Prepare a new Weekly PMS Schedule.

Date: 06/02/00 Planned Maintenance System Page: 1

Time: 14:24:15 MIP to Work Center (PMS 4) FR: 2-00

Unit: DDG 0053 UIC: R21313 USS JOHN PAUL JONES

MIP	Nomenclature	Work Center Distribution		
1230/001-C9	TANKS, VOIDS, AND TRUNKS	EM04		
1501/001-B9	SUPERSTRUCTURE & FITTINGS	ER01	OD01	
1631/004-C9	SEA CHESTS	EA01	EM01	EM02
1651/005-10	SONAR DOME RUBBER WINDOW	CA01		
1671/001-10	ARMORED DOORS & HATCHES	ER09		
1671/005-C9	WTRTT, DR, TORPEDO MAGAZINE	ER09		
1672/001-10	ARMORED DOORS & HATCHES	ER09		
1681/002-13	DECKHOUSE STRUCT CLOSURES	ER09		
1701/001-13	MAST 7 KINGPOSTS	CE01		
1921/001-A9	COMPARTMENT TESTING	ER01		
2000/001-A2	MACHINERY LUBRICATING OIL	EM01	EM02	EM04
2340/004-10	MAIN PROPULSION GAS TURBIN	EM01	EM02	
2400/011-10	XMSN & PROPULSOR SYSTEMS	EM01	EM02	
2411/015-10	PRPLN REDUCTION GEARS	EM01	EM02	
2421/002-C9	PROPULSION CLUTCH COUPLING	EM01	EM02	
2451/006-B9	PROPELLERS AND PROPULSORS	EM01	EM02	
2513/007-A9	COMBUSTION AIR SYSTEM	EM01	EM02	
2521/051-B9	AUTO PROPULSION CTRL SYS	EM03		
2560/006-10	CRCLT AND COOLING SW SYS	EA01	EM01	EM02
2591/001-10	UPTAKES AND BAFFLES	EM01	EM02	
2610/059-C9	FUEL SERVICE SYSTEM	EM01	EM02	EM04
2620/011-10	MAIN PROPULSION L O SYSTEM	EM01	EM02	EM03
2640/012-20	L O FILL XFR PURIFICATION	EM01	EM02	EM03
3000/001-20	MISC SHIPBOARD ELECT EQUIP	EE01	EM03	
3001/002-30	MISC CONTROLLERS	EE01	EM03	
3002/001-30	MISC AC/DC MOTORS	EE01	EM03	
3113/004-C9	S/S GAS TURBINE GEN SET	EM01	EM03	
3131/005-10	BATTERY/SERV FACILITIES	EE01		
3140/R51-B9	POWER AND CONVERSION	CF02		
3201/002-30	POWER CABLES (CASUALTY)	EE01		
3241/051-30	SWITCHGEAR AND PANELS	CF02	EE01	EM03

Figure 1-18: PMS MIP to WC File, Report No. PMS 4

Date: 01/02/00 Planned Maintenance System Page: 1
Time: 16:04:50 TFBR Status by Hull (PMS-22) FR: 1-00 Report Period 09/01/99-01/01/2000

Outstanding TFBR's for Naval Surface Force Pacific Ship ID: DDG-53

Serial #	Date Received	TFBRIL/XMTL Serial #	Date Sent	ISEA Responsible	ISEA Due Date	Revised Doc Revised	Days Delinquent
001793	01/03/94	001-14-3113	01/04/94	NAVSSES 141B	02/14/94		190
002693	01/03/94	911X/S7107	01/03/94	NSWC/PHD 5B41	02/13/94		191
008393	01/12/94					02/09/94	195
008493	01/10/94	911X/S7124	01/10/94	NSWC/PHD 5B41	02/20/94		184
009194	01/26/94					02/23/94	181
0211-94	07/19/94	911X/S8055	07/19/94	NSWC/PHD 5B41	08/29/94		0
0212-94	08/02/94	911X/S8162	08/02/94	NSWC/PHD 5B41	09/12/94		0
0221-94	07/19/94					08/16/94	7

Total Outstanding TFBR's: 8

Completed TFBR's for Naval Surface Force Pacific

Serial #	Date Received	TFBRIL/XMTL Serial #	Date Sent	ISEA Responsible	Resolution Letter	Response Date
001893	01/03/94	001-14-3431	01/04/94			
001993	01/03/94	002-14-3113	01/04/94			
008693	01/11/94	911G/004	01/18/94			
008793	01/11/94	911G/0008	01/18/94			
008993	01/11/94	911G/0009	01/18/94			
0120-94A	07/21/94	911X/S8101	07/21/94	NSWC/PHD 5B41		
0214-94	07/19/94	911-518-74-3113	07/20/94			
0225-94	08/08/94	032325/0244	08/10/94			
0226-94	08/08/94	032311/0172	08/11/94			
0227-94	08/08/94	032311/0171	08/11/94			

Total Completed TFBR's: 10

E N D - O F - R E P O R T

Figure 1-19: Outstanding TFBR Status by Hull

PMS SUPERSEDURE/NEW ISSUE ACCOUNTABILITY LOG

PMS DIT SER.#	DATE REC'D	COGNIZANT DEPARTMENT	DISPOSITION				
			MASTER MAN LOEP CYCLE SCHED ALTERED	MASTER MRC DECK MODIFIED	SPACE MAN LOEP WEEKLY SCHEDS ALTERED	SPACE MRC DECKS MODIFIED	SUPERSEDED MIP/MRC REPLACED

Date

MEMORANDUM

From: 3-M System Coordinator
To: _____ Division Officer
Via: _____ Department 3-M Systems Assistant

Subj: _____ FEEDBACK REPORT REPLY
_____ FORCE REVISION PACKAGE
_____ SPECIAL ISSUE
_____ NEW ITEMS
_____ 4790/2L REPLY

1. The following material has been received from the Fleet Technical Support Center:

Response Ltr Serial No. _____ Date
F.B. replies Serial No.
Nomenclature
Action taken:

2. Corrections, including those to MIP, LOEP and MRC, should be made immediately. Complete page 2 and return via the department 3-M Systems assistant as soon as all changes have been entered.

3. Action is/is not required by Work Center(s)

Figure 1-21: PMS Change Documentation Routing Memorandum (Sample #1)

P M S C H A N G E C H E C K - O F F S H E E T

From: _____ Department (_____)
(WORK CENTER)
To: 3-M System Coordinator

Subj: ____ CHANGE OR INSTALLATION OF PMS IAW REFERENCE (A)
(Complete paragraphs 1 and 2)
____ ACKNOWLEDGMENT OF THE REPLY OF REFERENCE (A)
(Paragraphs 1 and 2 not required)

Ref: (a) Your memo of
(DATE)

COMPLETED N/A
1. Department Level

a. Enter new LOEP in place of old one _____ _____
b. Correct appropriate Maintenance Index Pages (MIP) _____ _____
c. Change master MRC deck _____ _____
d. Enter changes on cycle schedule _____ _____
e. Enter changes on quarterly schedule _____ _____

Date of changes

Completed or acknowledged by:

2. Work Center

a. Enter new LOEP in place of old one in W/C manual _____ _____
b. Correct appropriate Maintenance Index Page (MIP) _____ _____
c. Change MRC deck _____ _____
d. Enter changes on weekly schedule _____ _____

Signature of Department 3-M Systems Date of changes: _____

Assistant _____ Completed or acknowledged by:

_____

RETURN TO 3-M SYSTEM COORDINATOR NLT

Figure 1-22: PMS Change Documentation Routing Memorandum (Sample #2)

1-5.17 Change Service Accountability Log

A Change Service Accountability Log (Figure 1-20) shall be maintained. Upon receipt of PMS changes, the 3-M System Coordinator shall maintain the identification number and other pertinent data in an accountability log prior to routing the documentation to the cognizant Work Center. After ensuring accountability, change documentation is passed to the applicable Work Center.

The 3-M System Coordinator completes the entry in the Change Service Accountability Log after the Work Center Supervisor has indicated that all appropriate change steps have been completed. After all work Centers have reported completion, the transmittal letter may be discarded. Change Service Accountability Log sheets should be retained for one year.

1-5.18 Documentation Provided TYCOMs via Force Revisions

The following PMS documentation is provided by FTSCLANT/FTSCPAC to the TYCOMs with each force revision:

a. A complete record of all MIPs/MRCs for each hull.

b. List of Effective Pages (LOEP) PMS-5 for each ship (Figure 1-1).

c. Listing of Outstanding (Category B) TFBRs, Report PMS 22 (Figure 1-19).

NOTE:

Besides the standard shipboard reports, others are available upon request from FTSCLANT/FTSCPAC to assist the TYCOM. An example is the MIP to Hull File, Report PMS 2, which identifies each hull to which a given MIP is applicable within that TYCOM. Contact FTSCLANT/FTSCPAC for additional information on reports available.

1-6 EQUIPMENT NOT COVERED BY PMS

There are items of equipment in the fleet which do not have PMS coverage. Reasons for this are numerous and include:

a. Insufficient funds for development of PMS.

b. Non-delivery of technical documentation for equipment previously delivered and installed.

c. Absence of a system for identifying and assigning priorities to outstanding fleet PMS requirements.

d. Determination that planned maintenance is not required.

1-6.1 Classification of Equipment Not Covered by PMS

The terms listed below have been established for use in PMS to aid in the classification of equipment or system status. SYSCOMs/BUMED, INSURV, and fleet units will be provided a status report of such equipment for use as a reference in determining the scope of PMS coverage and/or deficiencies in coverage.

a. Maintenance Requirement Substantiated (MRS). An equipment classified MRS has been analyzed by technical representatives of the cognizant SYSCOM/BUMED, and the need for PMS requirements established. A requirement then exists for final development, and the equipment is so identified for SYSCOM/BUMED action and is also listed in the PMS automated LOEP for each ship in which the equipment is installed.

b. No Maintenance Required (NMR). The term NMR can be assigned to equipment only if no maintenance other than normal housekeeping actions are required to keep the equipment in good operating condition. Technical review activities shall provide a RCM analysis to justify a NMR determination.

c. No Individual Requirement (NIR). NIR will be assigned to those equipments which do not require specific planned maintenance requirements of their own because the planned requirements for a higher assembly, of which the equipment is a part, satisfies the need. Technical review activities shall provide a RCM analysis to justify a NMR determination.

d. Lacks Adequate Technical Description (LATD). Items are so classified to reflect that insufficient descriptive information is available to determine PMS status.

1-6.2 Responsibilities for Providing Coverage

When a ship or TYCOM considers there is a need for PMS equipment coverage, the following steps will be taken:

a. The ship will notify FTSCLANT/FTSCPAC by PMS FBR Category B of the need for maintenance requirements.

b. If through the development process planned maintenance tasks have been identified, FTSCLANT/FTSCPAC will forward preliminary MIPs and/or MRCs to the applicable ships for those items coded "MRS" (copy to TYCOM). The covering transmittal letter will include the status of final coverage and other comments considered appropriate.

c. If preliminary MIPs and/or MRCs are not provided, the command will develop interim MIP and MRC procedures based on applicable technical manuals/documentation and quality maintenance processes. MRC procedures will be locally developed and scheduled. These locally developed procedures shall be submitted to the SYSCOM/BUMED as recommendations for the development of formal PMS. No local procedures will be incorporated into PMS without RCM analysis developed and submitted by a technical review activity. TYCOMs will screen and, if applicable, approve locally prepared shore command generated planned maintenance. Shore stations locally generated planned maintenance will not be incorporated in PMS.

1-7 INACTIVE EQUIPMENT MAINTENANCE (IEM)

1-7.1 Implementation and Responsibility

To implement procedures for the accomplishment of PMS for equipment declared in an inactive status, current PMS schedules are modified to annotate the requirements listed in the IEM section of the Maintenance Index Page (MIP) (Figure 1-22). For advance planning and scheduling of maintenance to take place, it is necessary to determine and identify the extent that ship's force personnel will apply PMS during an inactive period. MIPs in each Work Center will be reviewed to determine if equipment has IEM coverage, if the coverage is adequate, and what procedure to follow if there is no IEM coverage on the MIP in question. The Department Head is responsible for determining equipment IEM status.

1-7.2 Definition of Equipment Status

The applicability of IEM procedures is dependent on determination of equipment status using the following definitions:

a. Status I. Equipment that will remain on board and will be inactive for thirty days or longer and is not scheduled for corrective maintenance or overhaul.

b. Status II. Equipment that is inactive for thirty days or longer and is directly subject to corrective maintenance, overhaul, or removal for safe storage/replacement.

1-7.3 Inactive Equipment Maintenance (IEM) Documentation

IEM procedures are added to the end of existing MIPs and are separated from operational PMS by double horizontal lines (see Figure 1-22). The IEM procedures are titled "Inactive Equipment Maintenance" and are prefaced by the following statement:

> "The following requirements will be scheduled when equipment is inactivated for periods of prolonged idleness."

Maintenance actions for inactivated equipment are grouped on the MIP under the following categories (see Figure 1-22):

a. Lay-Up Maintenance (LU)

b. Periodic Maintenance (PM)

c. Start-Up Maintenance (SU)

d. Operational Test (OT)

When no IEM requirements are justified during IEM analysis, no categories will be listed on the MIP and the words "None required" will appear under the Inactive Equipment Maintenance Section of the MIP. When there is no indication of IEM requirements, or when IEM procedures are inadequate, the ship should consider all factors that affect equipment deterioration and take necessary precautionary measures. These factors include environmental conditions, equipment location, susceptibility to damage, or other factors that can not be anticipated when IEM procedures are originally developed by the cognizant In-Service Engineering Agent (ISEA) or design activity.

1-7.3.1 IEM Operational Periodicity Codes.

IEM utilizes operational periodicity codes for all IEM actions available on the MIP supplemented by IEM periodicity (LU, PM, SU, OT) for newly developed MRCs applicable to IEM only. Each periodicity code will be supported by an MRC in the applicable

set unless indicated otherwise on the MIP. New MRCs are generated only when:

a. An IEM action is required that is not available in operational PMS.

b. A scheduling MRC is necessary because of the number of PMS actions required and complex scheduling notes pertaining to support factors must be considered. A note on the MIP will specify that this MRC is used for scheduling only (see Figure 1-23). Scheduling MRCs are held to a minimum.

1-7.3.2 IEM Scheduling Situations.

The following situations may occur in IEM and may apply to any of the following four categories:

a. If the maintenance required is available in operational PMS, it is repeated in IEM followed by a note specifying the MRC to be used (see Figure 1-23).

b. If the maintenance action required does not exist in operational PMS, a new MRC is developed and listed on the MIP using LU, PM, SU, or OT as the periodicity designator (see Figure 1-23).

c. If more than one maintenance requirement appears on the operational MRC, one or more of the requirements will be designated for accomplishment by a note on the MIP (see Figure 1-23).

d. If a scheduling MRC is developed it will list numerous MRC periodicities to be scheduled and performed (see Figure 1-23).

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MIP CONTROL NUMBER: 3112/000-51 **DATE:** May 2001

SHIP SYSTEM, SYSTEM, SUBSYSTEM, OR EQUIPMENT
Ship Service Diesel Generator

REFERENCE PUBLICATIONS

CONFIGURATION

SCHEDULING AIDS
1. Review all MRC's. Omit maintenance (s) if not applicable; no feedback report required.

** For scheduling purposes only; no MRC is provided.

OTHER MRC NO.	MAINTENANCE REQUIREMENT DESCRIPTION	PERIO-DICITY CODE	RATES	MAN HRS	RELATED MAINT
51 CFDY N	1. Inspect engine oil Level. 2. Replace engine oil filters	S-15	EN2	1.0	None
51 GFMW N	1. Inspect engine fuel injectors	A-1	EN1 EN2 FN	2.0 1.0 1.0	None

INACTIVE EQUIPMENT MAINTENANCE

The following requirements will be scheduled when equipment is inactivated for periods of prolonged idleness.

Lay-Up Maintenance

A2 DYCF N	1. Drain cooling system and add preservatives	LU-1	FN	1.0
	1. Drain pump casing **NOTE:** Accomplish using MRC M-5 (MR-1)			

Periodic Maintenance

	1. Inspect engine internal water jackets. **NOTE:** Perform when system has been idle for over 30 days	PM-1 **		
	1. Inspect engine oil level. **NOTE:** Perform MRC M-2			

OTHER MRC NO.	MAINTENANCE REQUIREMENT DESCRIPTION	PERIO-DICITY CODE	RATES	MAN HRS	RELATED MAINT

Start-Up Maintenance

A2 CLDG N	1. Perform complete engine operational check. **NOTE:** This MRC should be accomplished prior to placing engine into service.	SU-2			

Operational Test

None

Figure 1-23: Maintenance Index Page Indicating IEM

1-7.4 Categories of IEM

1-7.4.1 Lay-Up Maintenance (LU)

Lay-up maintenance actions prepare the equipment for periods of prolonged idleness, and are usually performed only once at the beginning of the inactive period.

1-7.4.2 Periodic Maintenance (PM)

Periodic maintenance actions are accomplished on a recurring basis during the inactive period to prevent equipment deterioration. These maintenance actions are operational PMS performed at either the same periodicity with a note specifying the MRC to be used (Figure 1-23), or at a different periodicity with a note specifying the MRC to be used and the modified periodicity (Figure 1-23).

1-7.4.3 Start-Up Maintenance (SU)

Start-up maintenance actions ensure that equipment is in a condition suitable for operation or to reactivate an equipment or system that has been inactivated for a prolonged period. Start-up maintenance consists of performing turn-on procedures and restoring the equipment to its ready-for-service condition (Figure 1-24).

1-7.4.4 Operational Test (OT)

Operational test actions are those conducted to determine the operational condition of the equipment, its ability to function as designed, and to be integrated with other equipment to form a system.

1-7.5 IEM MRCs

IEM maintenance requirement cards are assigned SYSCOM MRC control numbers in the same manner as PMS MRCs. The SYSCOM MRC control number, periodicity indicator, skill level, and man-hours information, normally located adjacent to a maintenance requirement on the MIP, will not be repeated when an operational MRC is used for IEM.

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DATE: May 2001 **MIP SERIES:** 0000 **PERIODICITY:** SU-1

LOCATION:

SHIP SYSTEM:
SYSTEM:
SUB SYSTEM:
EQUIPMENT: Radar Set, AN/SPG-55A

RATE	MAN-HOURS	RATE	MAN-HOURS	RATE	MAN-HOURS
TOTAL MAN-HOURS:		**ELAPSED TIME:**			

MAINTENANCE REQUIREMENT DESCRIPTION

1. Perform start-up maintenance.

SAFETY PRECAUTIONS

1. Forces afloat comply with NAVOSH Program Manual for Forces Afloat, OPNAVINST 5100.19 series.

TOOLS, PARTS, MATERIAL, TEST EQUIPMENT

PROCEDURE

NOTE 1: This is a scheduling card. Schedule and perform listed MRCs for start-up maintenance.

1. Perform start-up maintenance.

CAUTION: Ensure fire retardant paper and pressure-sensitive tape are removed from louvers and fans.

NOTE 2: No power is required to perform MRCs in steps 1.a. through 1.f

a. Lubricate director valve components. S-5 and S-9.
b. Inspect, adjust, and lubricate elevator auxiliary drive assembly S-7, A-1.

Maintenance Requirement Card (NRC) Page 1 of 1 SYSCOM: S1 GLDB N
OPNAV 4790/85 (REV. 9-97)

Figure 1-24: Start up MRC

1-7.6 IEM SCHEDULING

At the conclusion of IEM, routine PMS maintenance requirements shall be scheduled as prescribed in Section I. SKED provides the capability to perform IEM scheduling.

NOTE:

Ships completing overhaul late in the quarter are not expected to do all planned maintenance scheduled during that quarter, but should do a certain amount based on the time remaining in the quarter.

The scheduling of maintenance for inactive equipment utilizes conventional PMS scheduling techniques.

Figure 1-25 is a sample quarterly schedule for an inactive period and portrays an equipment declared inactive in one maintenance quarter and returned to an operational status the following quarter. It also shows an item of equipment, which remained operational.

To schedule inactive equipment maintenance, determine the status of the equipment as described in paragraph 1-7.2 and prepare schedules as follows:

a. The cycle schedule will remain the same.

b. For paper users, on the quarterly schedule:

(1) Indicate vertically to designate the start of IEM. If only some of the items of the equipment are to be placed on inactive maintenance. The vertical line should be drawn only through the affected MIP line of the schedule for the inactive equipment maintenance (see Figure 1-25, item 1).

(2) At the beginning of IEM, to the left of the vertical line, list IEM Status I or II as appropriate (see Figure 1-25, item 1).

(3) Mark horizontally through all previously scheduled operational PMS requirements within the inactive period to signify cancellation (see Figure 1-25, item 2).

(4) From the IEM section of the MIP, schedule all lay-up and periodic requirements. Note the method of scheduling periodic maintenance of a different periodicity than that

specified on the MRC. Example: R-1(M) is a situation requirement extended to a monthly PMS requirement for IEM (see Figure 1-25, item 3).

(5) When the inactive period continues into the following quarter, operational PMS maintenance is not required to be scheduled until after the inactive period. Instead, inactive equipment maintenance requirements will be scheduled. When equipment remains in Status I or II through the beginning of a new quarter, indicate the status code in the first week on the appropriate line (see Figure 1-25, item 4).

(6) Schedule operational PMS requirements for those items of equipment not declared for inactive maintenance.

(7) Schedule the start-up requirements and, if required, operational tests toward the end of the inactive period (see Figure 1-25, item 5).

(8) At the end of the inactive period, mark vertically to indicate the stop of IEM and schedule operational PMS (see Figure 1-25, item 6). To avoid redundant scheduling when making the transition to operational PMS, do not reschedule those requirements already accomplished as part of the IEM actions.

(9) Identify the applicable external repair activity on the MIP line for equipment that is in overhaul and is considered an outside activity's responsibility (see Figure 1-25, item 7).

(10) Mark horizontally through all previously scheduled IEM requirements to signify cancellation if the equipment has been removed from the ship and is no longer ship's force responsibility.

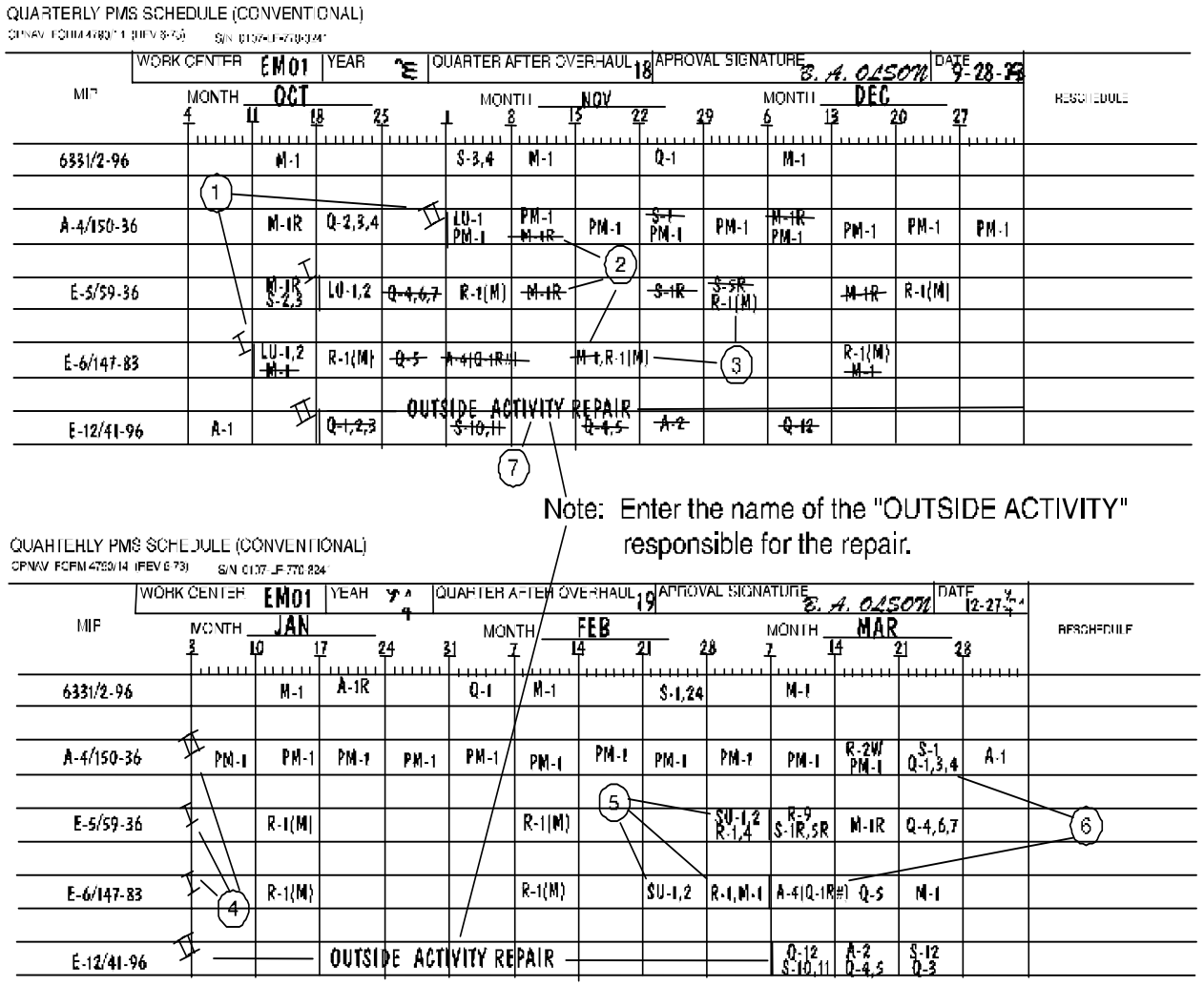

Figure 1-25: Sample IEM Schedule

1-8 SUPPLY MATERIALS REQUIRED PRIOR TO INACTIVATION

Certain advance preparations are necessary to properly prepare for IEM. Reference documents such as Current Ship's Maintenance Project (CSMP), Ship Alteration and Repair Package (SARP), LOEPs, MIPs, and MRCs should be reviewed by the shipboard maintenance manager well in advance of planned idle period. A comprehensive list of the needed equipment and materials required may be prepared by reviewing the IEM MRCs for the items called out under "Tools, Parts, Materials, Test Equipment."

Meeting IEM requirements in some cases will require that portable equipment such as exhaust blowers, heaters, and dehumidifiers are available. In other situations, special materials for protecting idle ship equipment must be used. Many items required in implementing IEM are normally used or stocked on the ship and are, therefore, readily available. Lubricants, cleaning agents, rags, hand tools, and test equipment are typical among these items.

Arrangements for loan and extended use of portable equipment during an overhaul period should be made with a tender or other repair/overhauling activity. In assessing equipment requirements, duplication of effort and equipment redundancy should be avoided. For instance, a particular overhaul action under shipyard responsibility may include provision of equipment, material, or services, otherwise assumed to be part of IEM requirements. In such cases, yard and ship responsibility must be determined.

Care must be exercised in the selection of cleaning agents, detergents, solvents, adhesives, cements, and similar materials to avoid the use of materials which, are not authorized. For example, on submarines, refer to the effective edition of the Material List for Operating Submarines and to NAVSHIPS 0938-LP-011-5010, Technical Manual, Nuclear Powered Submarine Atmosphere Control (CONF).

MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

SECTION I

Chapter 2

INITIAL PLANNED MAINTENANCE SYSTEM INSTALLATION AND UPDATE DURING OVERHAUL

SECTION I

Chapter 2

REFERENCES

REFERENCE	INSTRUCTION NO.	SUBJECT
None.	No instructions referenced in Chapter 2.	

SECTION I

Chapter 2

INITIAL PLANNED MAINTENANCE SYSTEM INSTALLATION AND UPDATE DURING OVERHAUL

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CHAPTER 2

INITIAL PLANNED MAINTENANCE SYSTEM INSTALLATION AND UPDATE DURING OVERHAUL

2-1 PLANNED MAINTENANCE SYSTEM (PMS) INSTALLATION (SHIPBOARD)

Type commanders (TYCOMs) are responsible for ensuring the proper installation and operation of PMS within the ships under their command. The importance of the PMS installation cannot be overemphasized.

2-1.1 Preparation of Materials

Prior to the PMS installation, equipment configuration information will be verified by the Configuration Data Manager (CDM). The PMS Maintenance Index Page/Maintenance Requirement Card (MIP/MRC) documentation will be certified by the Fleet Technical Support Center, Atlantic/Fleet Technical Support Center, Pacific (FTSCLANT/FTSCPAC), as appropriate. Following the validation, the applicable FTSCLANT/FTSCPAC will assemble the PMS documentation, equipment listings, schedules, and forms required for the installation package. Each PMS installation package is ship tailored. Installation packages consist of:

a. A transmittal letter with an inventory of installation materials.

b. Two copies of the List of Effective Pages (LOEP).

c. One PMS Master File. The PMS Master File contains information relative to PMS requirements for specific equipment for which the command is responsible.

d. One Work Center PMS Manual for each work center. The Work Center PMS Manual reflects that portion of the PMS Master File that contains only the planned maintenance requirements applicable to a particular work center and includes decks of associated MRCs and PMS Feedback Report (FBR) forms.

e. A PMS delivery/installation reporting card.

2-1.2 PMS Installation

The FTSCLANT/FTSCPAC have the responsibility for installing PMS aboard ship. The installation of PMS is done in two phases; preliminary and final.

2-1.2.1 Preliminary PMS Installation

A preliminary, time phased PMS package, tailored to the ships manning and compartment acceptance plan will be built and installed as the ship construction continues. Close coordination between the Supervisor of Shipbuilding (SUPSHIP), FTSCLANT/FTSCPAC, and the ship, monitored by TYCOM, will continue through final PMS installation. Periodicities of PMS may be altered to accommodate manning phases. The goal is to bridge the gap between acceptance of a space and PMS installation, minimizing damage to equipment/systems during this transition period.

2-1.2.2 Final PMS Installation

A final formal ship-wide PMS installation, which represents the full PMS package installation will correspond with the ships commissioning plan. The FTSCLANT/FTSCPAC will notify the ship via the telephone giving a proposed final PMS installation date, the names and security clearances of team members, and a brief resume of the procedures. The following provides a general time frame for installations:

a. Submarines and nuclear powered surface ships. Approximately 2 weeks prior to placing the ship IN SERVICE. (This also applies to other submersible vehicles.)

b. Surface Ships. Approximately 2 weeks prior to commissioning for all non-nuclear-powered ships.

c. A briefing will be conducted by FTSCLANT/FTSCPAC during the PMS installation and repeated during the final installation process. A TYCOM representative will be present at these briefings.

2-1.2.3 Installation Briefings

a. The Top Management Level Briefing. The installation team leader will conduct this briefing for the benefit of the Commanding Officer, Executive Officer, 3-M System Coordinator, and Department Heads. The purpose of the briefing will be to provide refresher training in the concept and management aspects of PMS. The briefing will be scheduled once the majority of Department Heads are aboard the pre-commissioning unit in accordance with the ship's commissioning plan.

b. Briefing for personnel below Department Head level. The installation team will conduct the Division Officer and Work Center level briefing. This briefing will consist of PMS

concepts and detailed procedures directed to the working level. It will be held once the majority of Division Officers and Work Center Supervisors have reported aboard. Additional briefings will be conducted by TYCOM as required during initial preliminary periods.

c. FTSCLANT/FTSCPAC will brief the 3M Coordinator during the formal full PMS package installation.

2-1.3 Inventory of PMS Installation Package

2-1.3.1 Inventory of Preliminary PMS Package

The FTSCLANT/FTSCPAC will provide a copy of the latest PMS package appropriate for the class ship on CD-ROM. The ship will monitor the pre-commissioning space acceptance progress and inventory equipment associated with spaces to be accepted. The ship will use the PMS package to identify applicable PMS and will coordinate with FTSCLANT/FTSCPAC to acquire applicable PMS documentation for those equipment/systems under ship's force control. FTSCLANT/FTSCPAC will assist the ship if PMS cannot be identified for a system to be accepted. It is the ship's responsibility to validate the PMS for their hull.

2-1.3.2 Inventory of Final PMS Package

Final PMS Package. The PMS installation team, in conjunction with ship personnel, shall conduct an inventory of the installation package received from FTSCLANT/FTSCPAC. This will be done to ensure the package contains all materials necessary for the PMS installation. The installation team will compile a list of all deficiencies and discrepancies. The installation team will forward this list directly to the FTSCLANT/FTSCPAC as appropriate for immediate corrective action.

2-1.4 PMS Package Installation Completion Check List

During the preliminary PMS package build, the installing activity will develop a check list to use during the PMS installation. This check list will be used to ensure that:

a. All PMS Work Center Supervisors are instructed in using the Automated Scheduling Program on how to do their PMS schedules and instructed in the preparation of Equipment Guide Lists (EGLs).

b. Supply personnel are familiar with the Standard PMS Item Name (SPIN), Standard PMS Material Identification Guide

(SPMIG) and other responsibilities in support of Ship's 3-M Systems.

c. The 3-M Coordinator, Division Officers, CPOs, and LPOs that can access Local Area Network (LAN) and the Internet from their work stations demonstrate the ability to connect to the RAD WEB, CDMD-OA and on-line 3-M Manual as required.

d. An adequate number of the Ships' 3-M Manual, OPNAV 4790 forms, and TYCOM 3-M Systems instructions are available on board.

2-2 UPDATE OF SHIPBOARD PMS PACKAGE DURING OVERHAUL PERIOD

The following procedures establish the general guidelines within which the FTSCLANT/FTSCPAC, overhaul activity, TYCOM, and ship will function to ensure that an adequate and accurate PMS update is accomplished prior to completion of a regular overhaul or any lengthy availability:

a. Three months prior to the start of overhaul (SOH) the responsible Integrated Logistics Overhaul (ILO) activity will initiate a letter of request to FTSCLANT/FTSCPAC as appropriate for a PMS update package. (When the availability/overhaul date is not known 90 days prior to SOH, the request will be made as soon as possible.) Thirty days prior to SOH and after receipt of the ILO request, the FTSCLANT/FTSCPAC will provide the following: PMS 4 (MIP to Work Center Lists), PMS 5 (List of Effective Pages (LOEP)), and one set of all updated MIPs and unclassified MRCs.

b. The ILO activity in conjunction with ship's force shall verify the PMS 4 and 5 listings with on board equipment configuration, and identify adds, changes, and deletes per Fleet ILO Activity Procedure Manual, Volume 8 (Planned Maintenance System Procedures). The total update package (Annotated PMS 5 (LOEP) and LOEP update list) shall be sent to FTSCLANT/FTSCPAC and the ship periodically during overhaul, but definitely by the end of the overhaul. This will allow the ship to begin PMS coverage prior to receipt of the Force Revision. Data submitted will be incorporated into the next Force Revision (FR). Items lacking PMS coverage but needing planned maintenance shall be added to the Maintenance Requirements Substantiated (MRS) listing.

c. When tasked and funded, the FTSCLANT/FTSCPAC shall coordinate the development of PMS requirements for MRS items.

d. The appropriate FTSCLANT/FTSCPAC shall provide the updated PMS documentation directly to the ILO activity, and the ship via the normal force revision (FR) cycle until the end of overhaul, at which time only the ship will continue to receive PMS documentation via FR updates.

e. The PMS update process cycle for overhaul periods is shown in Figure 2-1.

2-3 SCHOOLS/TRAINING COMMANDS

Installation teams are not provided to training commands and schools for installing or updating PMS as is provided to fleet units. Sufficient training, however, is available on both the east and west coasts to assist the training activities in readying staff and instructor personnel for the receipt, distribution of materials, and the execution of the PMS program in the individual commands. These training courses are delineated in Section IV, Chapter 1.

The schools/training commands are responsible for the same functions specified for shipboard PMS installation and updates. Following receipt of a PMS package or Force Revision (FR) update from FTSCLANT/FTSCPAC, implementation of new and updated PMS documentation shall be accomplished using existing procedures for both PMS installation and shipboard updates as described in chapter 1 of this section.

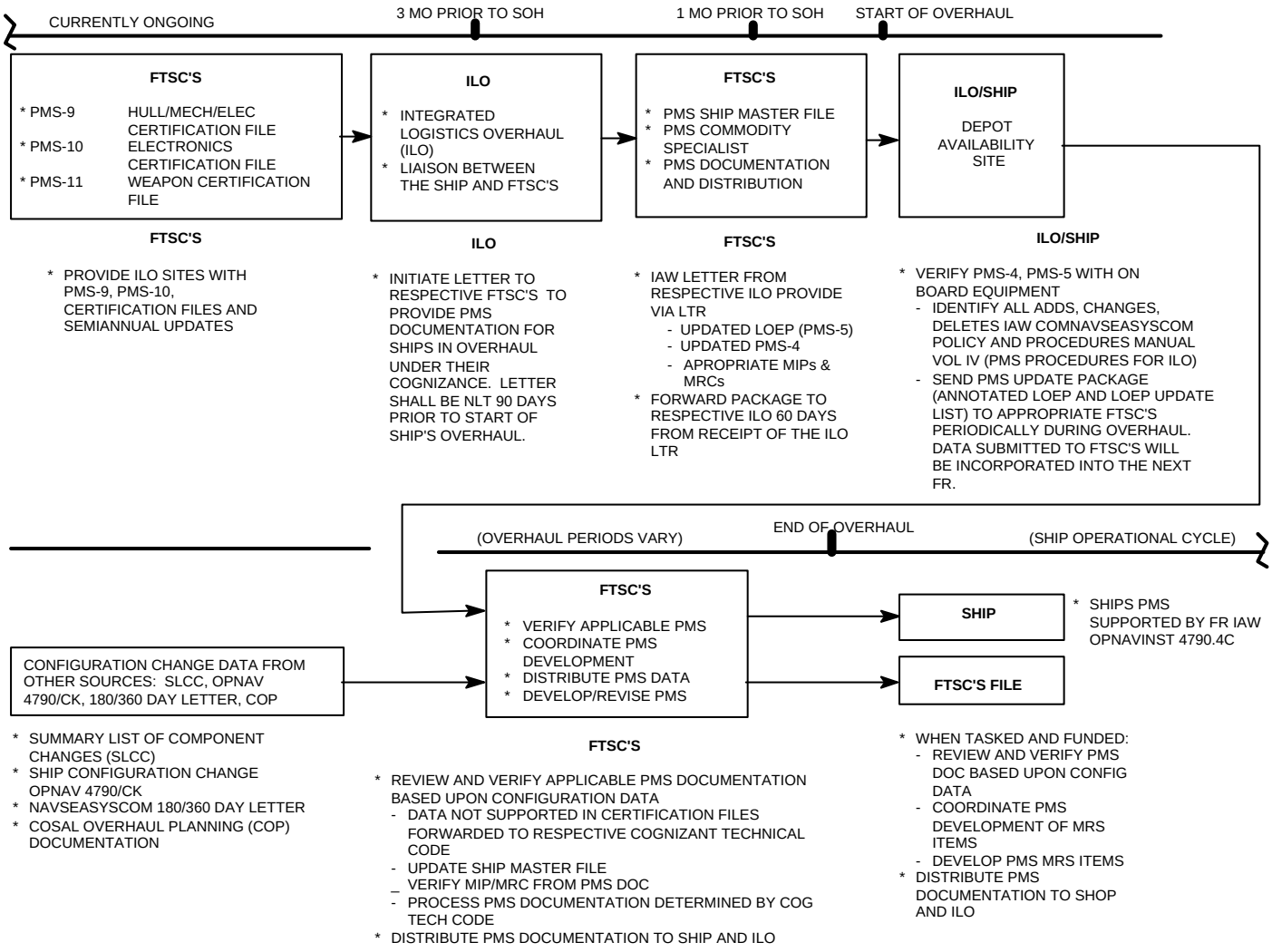
CURRENTLY ONGOING
3 MO PRIOR TO SOH
1 MO PRIOR TO SOH
START OF OVERHAUL
FTSC'S
* PMS-9 HULL/MECH/ELEC CERTIFICATION FILE
* PMS-10 ELECTRONICS CERTIFICATION FILE
* PMS-11 WEAPON CERTIFICATION FILE
ILO
* INTEGRATED LOGISTICS OVERHAUL (ILO)
* LIAISON BETWEEN THE SHIP AND FTSC'S
FTSC'S
* PMS SHIP MASTER FILE
* PMS COMMODITY SPECIALIST
* PMS DOCUMENTATION AND DISTRIBUTION
ILO/SHIP
DEPOT AVAILABILITY SITE
FTSC'S
* PROVIDE ILO SITES WITH PMS-9, PMS-10, CERTIFICATION FILES AND SEMIANNUAL UPDATES
ILO
* INITIATE LETTER TO RESPECTIVE FTSC'S TO PROVIDE PMS DOCUMENTATION FOR SHIPS IN OVERHAUL UNDER THEIR COGNIZANCE. LETTER SHALL BE NLT 90 DAYS PRIOR TO START OF SHIP'S OVERHAUL.
FTSC'S
* IAW LETTER FROM RESPECTIVE ILO PROVIDE VIA LTR
- UPDATED LOEP (PMS-5)
- UPDATED PMS-4
- APROPRIATE MIPs & MRCs
* FORWARD PACKAGE TO RESPECTIVE ILO 60 DAYS FROM RECEIPT OF THE ILO LTR
ILO/SHIP
* VERIFY PMS-4, PMS-5 WITH ON BOARD EQUIPMENT
- IDENTIFY ALL ADDS, CHANGES, DELETES IAW COMNAVSEASYSCOM POLICY AND PROCEDURES MANUAL VOL IV (PMS PROCEDURES FOR ILO)
- SEND PMS UPDATE PACKAGE (ANNOTATED LOEP AND LOEP UPDATE LIST) TO APPROPRIATE FTSC'S PERIODICALLY DURING OVERHAUL. DATA SUBMITTED TO FTSC'S WILL BE INCORPORATED INTO THE NEXT FR.
(OVERHAUL PERIODS VARY)
END OF OVERHAUL
(SHIP OPERATIONAL CYCLE)
CONFIGURATION CHANGE DATA FROM OTHER SOURCES: SLCC, OPNAV 4790/CK, 180/360 DAY LETTER, COP
* SUMMARY LIST OF COMPONENT CHANGES (SLCC)
* SHIP CONFIGURATION CHANGE OPNAV 4790/CK
* NAVSEASYSCOM 180/360 DAY LETTER
* COSAL OVERHAUL PLANNING (COP) DOCUMENTATION
FTSC'S
* VERIFY APPLICABLE PMS
* COORDINATE PMS DEVELOPMENT
* DISTRIBUTE PMS DATA
* DEVELOP/REVISE PMS
FTSC'S
* REVIEW AND VERIFY APPLICABLE PMS DOCUMENTATION BASED UPON CONFIGURATION DATA
- DATA NOT SUPPORTED IN CERTIFICATION FILES FORWARDED TO RESPECTIVE COGNIZANT TECHNICAL CODE
- UPDATE SHIP MASTER FILE
- VERIFY MIP/MRC FROM PMS DOC
- PROCESS PMS DOCUMENTATION DETERMINED BY COG TECH CODE
* DISTRIBUTE PMS DOCUMENTATION TO SHIP AND ILO
SHIP
* SHIPS PMS SUPPORTED BY FR IAW OPNAVINST 4790.4C
FTSC'S FILE
* WHEN TASKED AND FUNDED:
- REVIEW AND VERIFY PMS DOC BASED UPON CONFIG DATA
- COORDINATE PMS DEVELOPMENT OF MRS ITEMS
- DEVELOP PMS MRS ITEMS
* DISTRIBUTE PMS DOCUMENTATION TO SHOP AND ILO

Figure 2-1: PMS Documentation Support During Overhaul

MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

SECTION I

Chapter 3

ORGANIZATIONAL LEVEL MAINTENANCE DATA SYSTEM INTERFACE

SECTION I

Chapter 3

REFERENCES

REFERENCE	INSTRUCTION NO.	SUBJECT
(a)	SPCCINST 4441.170A	COSAL USE AND MAINTENANCE MANUAL
(b)	NAVSEA TECHNICAL SPECIFICATION 9090-700 Series	SHIPS CONFIGURATION AND LOGISTICS SUPPORT INFORMATION SYSTEM (SCLSIS)
(c)	NAVSEA TECHNICAL SPECIFICATION 9090-310 Series	ALTERATIONS TO SHIPS ACCOMPLISHED BY ALTERATION INSTALLATION TEAMS

SECTION I

Chapter 3

ORGANIZATIONAL LEVEL MAINTENANCE DATA SYSTEM INTERFACE TABLE OF CONTENTS

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SECTION I

Chapter 3

ORGANIZATIONAL LEVEL MAINTENANCE
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CHAPTER 3

ORGANIZATIONAL LEVEL MAINTENANCE DATA SYSTEM INTERFACE

3-1 PURPOSE

The purpose of this chapter is to provide the 3-M Program's Maintenance Data System (MDS) policy and guidelines in support of organizational (O) level shipboard maintenance and material reporting. MDS provides the maintenance and material managers throughout the Navy with the means to plan, acquire, organize, direct, control, and evaluate manpower and material resources expended or planned for expenditure in support of maintenance. It allows for information collected by maintenance personnel to be recorded only once, and the maintenance database thereafter will provide information to all who have a need for it.

3-2 SCOPE

This chapter specifies and standardizes the requirements for O-level MDS reporting. It requires the reporting of maintenance actions and configuration changes on all categories of equipment. Maintenance data collection or reporting requirements, not specified in this manual, will not be levied on fleet units by the shore establishment without prior approval of the Chief of Naval Operations (N43).

3-3 OBJECTIVE

3-M Organizational Level Maintenance provides a means to effectively manage and control organizational maintenance. It is primarily managed via the Current Ship's Maintenance Project (CSMP). A thorough and accurate CSMP reflects the material condition of the ship. This objective is achieved by:

a. Reporting maintenance actions.

b. Reporting configuration changes.

c. Producing Current Ship's Maintenance Project (CSMP) reports.

d. Producing work requests/work candidate.

e. Producing deficiency documents for use by the Board of Inspection and Survey (INSURV).

f. Providing information necessary to evaluate and improve readiness, reliability, maintainability, and availability of installed systems and equipments.

g. Providing maintenance history information to the 3-M Systems Central Database.

3-4 3-M ORGANIZATIONAL (O) LEVEL MAINTENANCE DATA SYSTEM

O-level maintenance requires the reporting of maintenance actions, configuration changes, and Coordinated Shipboard Allowance List (COSAL) feedback reports to achieve the desired objectives. It allows for information collected to be recorded only once by maintenance personnel for inclusion into the ship's CSMP. Maintenance managers use the CSMP to manage and control the accomplishment of deferred maintenance and for the research of financial, industrial, operational, and analytical purposes in support of ships. It is the responsibility of each work center supervisor to ensure that the CSMP accurately describes the material condition of the work center. For each maintenance action, it is imperative that:

a. Proper equipment is identified.

b. Correct codes are used.

c. Chain of command reviews each transaction.

d. Proper supply documents are generated to ensure that the correct parts are ordered.

Various automated systems have been developed to reduce the shipboard manual workload associated with maintenance; provide users with a responsive and flexible facility for on-line management of maintenance, and improve the accuracy and timeliness of existing up-line reporting.

3-4.1 Central Shore Databases

The ability to accurately document, track, and maintain the configuration and maintenance history of ships' systems is critical for maintaining proper shipboard logistics support. The Naval Sea Logistics Center (NAVSEALOGCEN) 3-M Systems Central Database is the focal point for receipt and distribution of maintenance and material data. The Configuration Data Managers Database – Open Architecture (CDMD-OA) database serves as the Navy's central repository for Ship Configuration and Logistic Support Information (SCLSI). This information also assists in Battle Damage Assessment (BDA) and repair.

3-4.1.1 Maintenance Data

Reported maintenance action information is used for material history purposes and is the basis for the material and logistics support necessary to maintain equipment. Maintenance and material information in numerous reports and formats are available through the 3-M central database to any command requiring the information. These reports yield information concerning equipment maintainability and reliability, man-hour expenditures, material usage and costs, and material condition. Refer to Section III Chapter 1 of this instruction for information on obtaining 3-M data reports from NAVSEALOGCEN.

3-4.1.2 Configuration and Logistics Data

The accuracy of the ship's configuration information affects the quality of the logistics support that the ship receives. Inaccurate data will result in the ship being supplied with incorrect component parts and technical documents necessary for the operation and maintenance that will hinder battle damage repair efforts.

The CDMD-OA database is the source for configuration and logistic support data available to ships and other fleet and shore activities. This will also support appropriate Class Maintenance Plan scheduling and refurbishment requirements and identify all of the items, components, equipment, sub-assemblies, assemblies, sub-systems, and systems requiring integrated logistics support.

3-4.2 Ship Configuration and Logistics Support Information System (SCLSIS)

The Naval Sea Systems Command (SEA 04L5) manages and directs the SCLSIS process which supports the equipment Configuration Status Accounting (CSA) and logistics delivery processes throughout the Navy. Policy, implementation, operation and maintenance of all aspects of SCLSIS are provided in NAVSEA Technical Specification 9090-700 (Series).

The SCLSIS process is used for Navy and Coast Guard automated and non-automated surface ships and submarines. SCLSIS also serves designated shore activities (e.g., Mobile Inshore Underwater Warfare Units (MIUWU), Moored Training Ships (MTS), Antisubmarine Warfare Operations Center (ASWOC) sites and other Navy activities) and equipment system groups such as Aircraft

Launch and Recovery Equipment (ALRE), Navigational Aids and Landing Systems (NAALS), and AEGIS systems.

3-4.2.1 Shipboard Benefits of SCLSIS

The SCLSIS process allows ships to maintain an on-line source of their SCLSIS information allowing them to locate and determine configuration, logistics, and supply data associated with all installed equipment. This information can then be used to fill in Maintenance Data System actions (OPNAV 4790/2Ks, 4790/CKs, and Work Candidate) without having to refer to a series of manual or off-line reference books and files. The on-line system also allows the maintenance personnel to identify the repair parts associated with the equipment/systems that they are maintaining and to order these parts on-line. Since the bulk of the configuration data in the NTCSS Shipboard Non-tactical Automated Data Processing Program (SNAP) database or the NTCSS Organizational Maintenance Management System – Next Generation (OMMS-NG) database is provided, the shipboard personnel need only report the information relevant to the actual maintenance of the equipment. Supply and maintenance worthy configuration changes shall be reported and processed by the Configuration Data Manager (CDM) for Logistics Support Documentation (LSD).

The CDMD-OA database provides information used by Navy Inventory Control Point (NAVICP), Mechanicsburg, for calculation of the allowances for repair parts carried onboard. The ship’s database, SNAP or OMMS-NG, is periodically updated as a part of the SCLSIS process. This enables the supply department aboard ship to easily maintain its COSAL and order repair parts.

The CDMD-OA database is also used to identify which technical manuals, Planned Maintenance System (PMS) documents, and test equipment are necessary to support the on-board equipment and systems. Accurate reporting of configuration data is critical to ensure on-board logistics documentation and parts support is available.

3-4.2.2 Ship Responsibility

Automated and non-automated ships maintain a copy of their own configuration and logistics database. This database is the same as the unit's section of the master CDMD-OA database. The two databases are kept in synchronization through the SCLSIS management process.

To ensure timely receipt of accurate configuration data, logistics support data and COSAL/supply support data, the ship must:

a. Promptly report equipment installed, removed, or modified by ship’s force using a Configuration Change OPNAV 4790/CK form.

b. Review all configuration change maintenance actions, equipment file corrections, logistics support transactions, and Automated COSAL Improvement Program (ACIP) transactions/COSAL feedback reports before transmitting them for shore processing.

c. Process all Automated Shore Interface (ASI) data into their automated system promptly in accordance with the SCLSIS Technical Specification.

Ships without an automated system installed are responsible for reporting equipment/component changes detected or accomplished by ship's force, Intermediate Maintenance Activities (IMAs), or Alteration Installation Teams (AITs). Shipboard personnel report the configuration changes to the TYCOM via a completed OPNAV 4790/CK Form or Work Candidate. It is the ship's responsibility to:

d. Ensure that OPNAV 4790/CK/ Work Candidate Forms are accurate and complete.

e. Submit ACIP transactions/COSAL Feedback Reports to identify deficiencies in the ship's COSAL.

3-4.2.3 Certification of Shipyard Installed Alterations

A certification of alteration accomplishments is provided by the Navy Supervising Activity (NSA) to the recipient ship and the appropriate Configuration Data Manager (CDM) when Shipyard accomplished the installation. This certification includes the work center Job Sequence Number (JSN) assigned to the alteration, and the Final Action taken. The certification will be in the format shown in Figure 3-3. The ship shall endorse the shipyard’s certification letter and forward to the supporting activity managing the Unit’s Master CSMP. The endorsement provides authorization for information transmitted to be processed as completed deferrals in the Master CSMP. Refer to Figure 3-4. This eliminates the need for documenting multiple configuration changes (OPNAV 4790/CK/ Work Candidate) to close the CSMP deferral. Configuration changes made by the depot in accomplishing the alterations are reported separately from 3-M.

3-4.3 3-M Reporting Requirements

3-4.3.1 Reporting Methods

3-M requires all Afloat activities report deferred and completed maintenance actions, configuration changes, configuration file corrections, and (COSAL) Feedback Reports. For information on COSAL feedback reporting, refer to reference (a). As directed by TYCOM or higher authority, 3-M work centers at shore activities are to report corrective maintenance and configuration changes on all installed shipboard-identical equipment and equipment installed in service crafts and boats.

a. Manual. The configuration and maintenance forms used for manual reporting are the Ship's Configuration Change Form OPNAV 4790/CK, the Ships Maintenance Action Form OPNAV 4790/2K, Work Candidate and the Supplemental Form, OPNAV 4790/2L. Appendix B shows examples of how to document corrective and preventive maintenance actions. For nuclear alterations, consult TYCOM directives for CSMP procedures.

b. Automated. MDS automated data reporting is basically the same as in the non-automated 3-M program. The terms "2K", "CK", and “Work Candidate” are perpetuated in supporting software even though the paper forms are not filled out (with the exception of the Supplemental Form, OPNAV 4790/2L). Transactions are entered into the computer and up-line reported by using applicable software. Software instructions are developed and distributed by the 3-M Central Design Activities (CDAs) and supplemented by TYCOM instructions as required. Options are available in the systems to print simulated OPNAV 4790/2K, OPNAV 4790/CK and Work Candidate forms when desired. (Check the applicable system's user manual OR ONLINE HELP for additional information).

With an automated information system, the computer will provide on-line access to the data for identifying equipment and ordering parts. When documenting requirements, many of the data elements required for corrective maintenance and configuration change reporting, such as the APL, EIC, Equipment Name, and Location, will be pre-filled and displayed when the applicable equipment is identified.

3-4.3.1.1 Data Elements

Appendix A provides the data elements and allowed values (if applicable) for each type of reporting.

3-4.4 Work Candidate/Job Sequence Number (JSN) Log

The Work Candidate/JSN logs are used by all non-automated ships. The Work Center (WC) supervisor shall maintain a Work Candidate/JSN Log using the format shown in Figure 3-1. The Unit Identification Code (UIC) and Work Center Code must be entered on each page of the log. A separate JSN for each maintenance action reported from that Work Center must be assigned. The JSNs shall be in sequential order. The WC supervisor shall ensure that an identical JCN is assigned to the maintenance action and to any material request (NAVSUP 1250 or DD 1348) associated with it. The Division Officer shall check the Work Candidate/JSN log at least weekly.

3-4.5 Deferred Maintenance Action

A deferred maintenance action is a maintenance requirement that meets one or more of the following criteria:

a. Requires assistance from an activity external to the ship to accomplish (for example, Intermediate Maintenance Activity (IMA), Technical Support Unit, depot, etc.), or is a ships force job requiring assistance from outside the originating work center (for example parts required).

b. Is not expected to accomplish by ship's force within the time frame prescribed by the TYCOM.

c. Is an uncorrected deficiency reported by INSURV (refer to Section II Chapter 1) or other inspecting activity (CMAT, C5RA, etc.).

d. Is required to correct a condition which has caused, or has the potential to cause injury to personnel and/or damage to material.

For non-automated sites, the OPNAV 4790/2K Ship's Maintenance Action Form is used to report a deferred maintenance action. Refer to Appendix B for manually completing the 4790/2K.

For automated sites, refer to the applicable system's user manuals and guides.

3-4.6 Completed Maintenance Actions

The ship is responsible for submitting a completed maintenance action to report:

a. Completion of maintenance actions previously deferred. If no further work is required by ship's force, higher authority may allow an outside activity to report its completion. This is referred to as an "automatic close-out".

b. Completion of maintenance actions not previously deferred.

c. Completion of maintenance actions for Selected Level Reporting (SLR) equipment, as defined in paragraph 3-5.

d. Accomplishment of an alteration directive, i.e., Ship Alteration (SA), Ordnance Alteration (OA), Field Change (FC), etc. Policy and implementation are provided in reference (c).

e. Addition of any new equipment or system.

f. Relocation of any equipment.

g. Replacement or exchange of any equipment.

h. Deletion, removal, or turn-in of any installed equipment.

i. Completion of maintenance actions considered significant for material history purposes, such as:

(1) Maintenance actions which alter the design or operating characteristics of an equipment or system

(2) Other maintenance actions or conditions that are considered significant for future reference purposes.

j. Accomplishment of maintenance that required parts shall be requisitioned.

k. Submarines and all ships configured with Automated Information Systems (AIS) will report all corrective maintenance actions.

For non-automated sites, the OPNAV 4790/2K Ships Maintenance Action Form is used to report a completed maintenance action. Refer to Appendix A for the data elements and allowed values and

Appendix B for the instructions for manually completing the OPNAV 4790/2K.

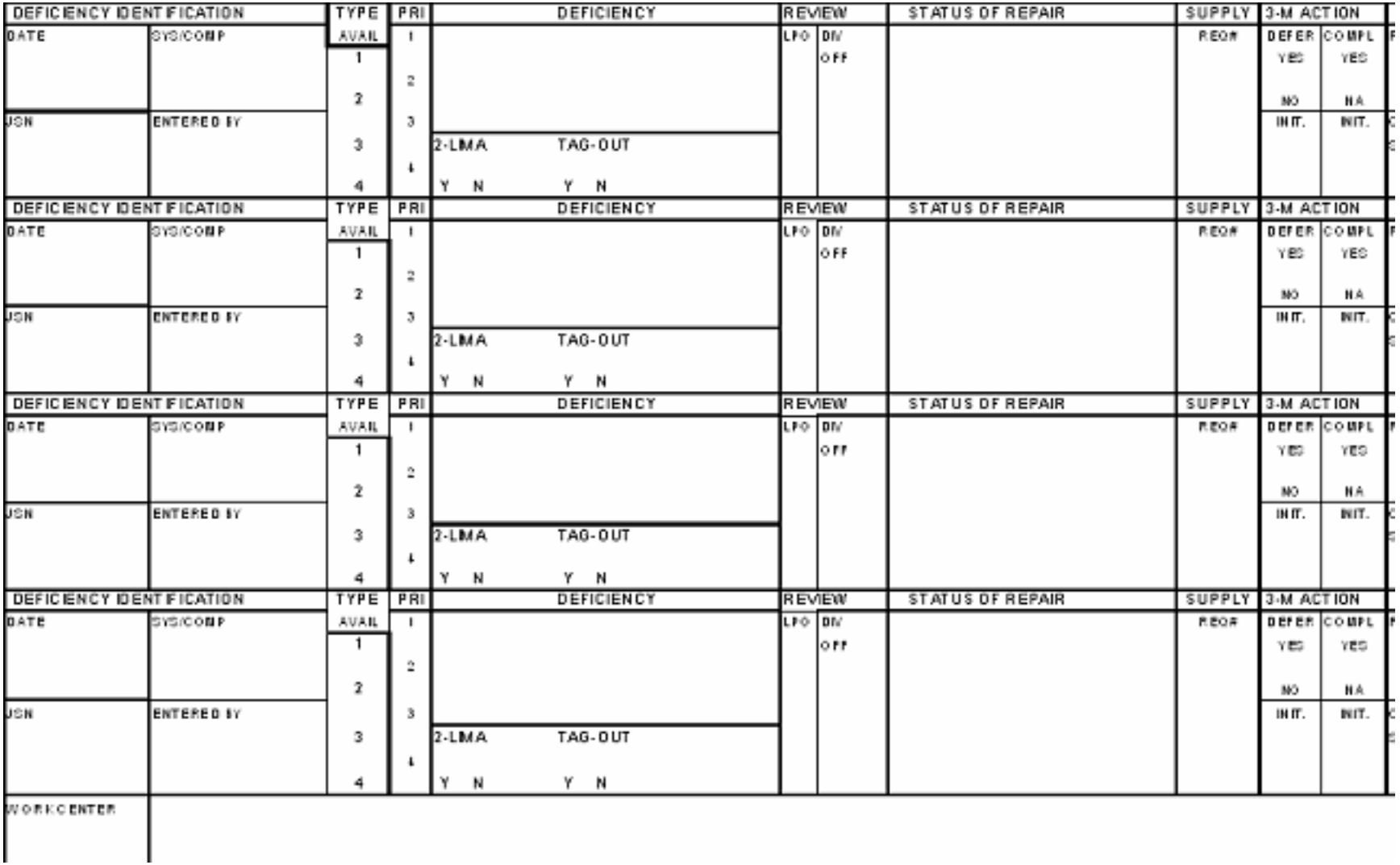

Figure 3-1: Work Candidate/Job Sequence Number (JSN) Log

3-4.7 Reporting a Completed Maintenance Action that was Related to an Alteration, or Resulted in a Configuration Change

For the purpose of reporting configuration changes, all alteration directives, deletions, turn-ins, modifications, additions, installations, or replacements of equipment are included in the term "maintenance action," whether or not corrective maintenance is actually performed.

The responsibility for identifying and reporting configuration changes exists at all levels of the command. Although the ultimate responsibility for reporting configuration changes resides with the ship, installing activities are required to pre-load planning data in CDMD-OA and to submit subsequent completion reports. For emergent requirements (when the installing activity has not pre-loaded the data in CDMD-OA), the installing activity will provide the ship with properly filled out and complete Configuration Change forms (OPNAV 4790/CK).

During depot availability the installing activity shall ensure that configuration changes are promptly and properly reported. Alteration certification letters shall be provided to the ship by the depot level activity.

NOTE

The ship is responsible for reporting ship's force accomplished configuration changes to the ILO team during ILO related availability.

Reporting is required for the:

a. Addition, installation, or ownership change of any equipment.

b. Deletion, removal, or turn-in of any installed equipment

c. Replacement or exchange of any equipment. Non-serialized exact replacements do not change configuration records or logistics support and do not require a configuration change to be reported unless required by an alteration directive.

d. Modification of any installed or "in use" equipment. A modification occurs when a maintenance action alters the design or operating characteristics of the equipment. Equipment

is considered modified and reporting is required when non-standard replacement parts (not identified on the APL or in the technical manual) are used in the accomplishment of the maintenance. Departure from Specification (DFS) is documented by TYCOM instructions.

e. Relocation of any equipment to a different deck, frame, or compartment; or, if it affects ships drawings or other logistic support data. Any other relocation of equipment is considered a maintenance action and requires a completed maintenance action to be reported (for non-automated ships, use the OPNAV 4790/CK Form).

f. Re-designation of any space or compartment.

g. Accomplishment of any alteration directive.

For non-automated ships, the OPNAV 4790/CK Ships' Configuration Change Form is used to report the accomplishment of maintenance actions that are related to an alteration, or result in a configuration change. Refer to Appendix A for the data elements and allowed values and Appendix B for the instructions for manually completing the OPNAV 4790/CK.

NOTE

For Reactor Plant Modification Reporting, configuration changes and modifications performed to equipment/components under NAVSEASYSCOM (SEA 08) cognizance are reported manually. The Reactor Plant Configuration Change Report (RPCCR) is used to report these modifications. TYCOM directives contain detailed procedures for the preparation and submission of these reports.

3-4.8 Documenting a Periodic Maintenance Requirement (PMR)

There are certain equipment and components in the fleet that require periodic maintenance such as tests, inspections, repairs, restorations, and replacements. With select automated systems, periodic maintenance tasks and routines are maintained on file with planning information. The record containing both the routine, test, etc., along with the planning information is called a Periodic Maintenance Requirement (PMR).

Use of PMR’s provide the management of configuration and scheduling information for each equipment requiring periodic maintenance or calibration. As PMRs are established for an

equipment SUBMEPP/CDMD-OA provides configuration and scheduling records and the Master Job Catalog (MJC) addition to each affected Regional Maintenance Automated Information System (RMAIS) site for subsequent MPMR application. Ship's force may also submit the related configuration and scheduling information for automation of PMS Equipment Guide Lists (EGLs) into MPMR. This information is used to establish a Master Job Catalog (MJC) routine. The MJC routine will be added to the CSMP when the equipment is due for periodic maintenance as indicated by the scheduling information provided by NAVSEA/TYCOM. MJCs can be scheduled for accomplishment by ship's force or by an intermediate or depot level activity. PMR accomplishment will be reported as directed by the TYCOM. For additional information on PMR refer to Appendix C.

3-4.9 Configuration File Correction

In addition to reporting configuration change as a result of accomplishing a maintenance action, it is necessary to correct deficiencies in the configuration file to obtain support for equipment that is on board but is not identified in the COSAL, or to delete from the COSAL equipment that is not on board but is supported. There are five categories of actions that must be reported. A configuration change record is submitted to:

a. Correct ship controlled data elements in an existing record of the ship's configuration baseline. For additional information concerning the data elements, refer to the SCLSIS Technical Specification 9090-700 series, Part B.

b. Correct erroneous data previously submitted.

c. Obtain support for equipment that is on board, but not identified as such.

d. Identify equipment that is supported but is not on board.

e. Report the turn-in/receipt of Portable Electrical/ Electronic Test Equipment (PEETE).

For non-automated sites, the OPNAV 4790/CK Ships Maintenance Action Form is used. If using this form refer to Appendix B for form preparation instructions and examples.

For automated sites, refer to the applicable system's user manuals/guides for the procedure used to change, add, or delete file information.

3-4.10 Documenting Changes, Additions, or Deletions to previously reported maintenance actions

Any information previously reported on a deferred maintenance action, with the exception of the Job Control Number (JCN) and the deferral date, can be added, deleted, or changed. Care should be taken not to make changes to jobs that have already been reported up-line. This will require additional screening by outside activities. Automated sites may have additional fields that cannot be modified.

CAUTION: Once a JCN deferral has been processed, it remains on each processing activity's CSMP (i.e., the S/F OMMS, the ISIC/SSSU/RSG MRMS/RMAIS, the TYCOM master CSMP and the NAVSEALOGCEN AORS database) until the COMPLETED DEFERRAL is processed. When 3-M Coordinators or ISIC/SIMA MDCO/ARRS ship supervisor personnel "Delete/Purge" the JCN will remain on all other affected CSMPs if the reporting completion/cancellation is not reported up-line.

3-5 SELECTED LEVEL REPORTING (SLR)

Selected Level Reporting (SLR) is a process that provides the capability for data collection on unique data elements, related to specific equipment, that are in addition to the standard Work Candidate (2-Kilo) submission. Designated SLR equipment may be either new or modified, proven to be unreliable, or require the collection of unique information to determine reliability. The NAVSEA 04RM SLR technical agent, NAVSEALOGCEN Mechanicsburg, performs the development, maintenance and distribution function for SLR. SLR data that is collected is ultimately available in the Ships' 3-M system via the Open Architectural Retrieval System (OARS).

3-5.1 Selected Equipment Indicator (SEI)

The Selected Equipment Indicator (SEI) resides in both the Configuration Data Managers Database-Open Architecture (CDMD-OA), considered to be the master database, and in the shipboard equipment file as well. The value contained in the SEI controls whether an individual equipment record is regarded as an SLR record. If a given equipment file record contains an appropriate specific SEI value it determines which set of unique additional data elements will be displayed on an SLR template upon entering a Work Candidate (2-Kilo).

NAVSEALOGCEN Mechanicsburg, as the NAVSEA 04RM SLR technical agent, maintains the values in SEI via the CDMD-OA. Changes to SEI are accomplished by using unique Unit Identification Code

(UIC)/Record Identification Number (RIN) combinations via special workfiles (Item Type = SEI). The SEI is not updateable on the CDMD-OA browse or detail screens. The only acceptable method for modifying SEI is with the applicable Configuration Data Manager (CDM) processing an "SEI" workfile created by NAVSEALOGCEN Mechanicsburg.

Any changes to SEI in CDMD-OA automatically forwards a duplicate change transaction to the applicable activity in order to keep the values of SEI "in sync" between the master database in CDMD-OA, and the onboard equipment file.

3-5.2 Selected Level Reporting Categories

The three distinct categories of SLR data are Level 1, Level 2, and Level 3. In addition to the basic Work Candidate (2-Kilo) data entry requirements, Level 1 additionally requires a mandatory data entry for both "Active Maintenance Time" and "Trouble Isolation" during all completion entries. Level 2 requires data entry, as specified below, for the following fixed set of pre-defined unique data elements in addition to the requirement for all Level 1 data entry as well as all basic Work Candidate (2-Kilo) entries:

Start Time (Hours) - mandatory on a deferral and a completion

Stop Time (Hours) – mandatory on a completion only

Repaired/Replaced (1 or 2) – mandatory on a completion only

End of Downtime – optional

End of Logistics Delay – optional

End of Outside Assistance – optional

Mode of Operation – optional

In addition to the above unique data elements the following information is expected as an optional entry in the free-form "Remarks" for Level 2 SLR reporting:

Problem(s) encountered

Reference Designators/Part Serial Numbers

Symptoms of Failure

Logistics Deficiencies

Description of Difficulties

Description of multiple events within a Work Candidate

Any other helpful information regarding the event

A “Meter Reading” entry is also desired on all completions of equipment designated as either Level 1 or Level 2, but entry is not mandatory.

Level 3 Specialized Reporting requires data entry for various unique data sets as defined by the requestor for each equipment designated as Level 3. Level 3 Specialized Reporting utilizes a unique “template” for collection of the desired information within the applicable onboard operating system whether it be the legacy Shipboard Non-Tactical ADP Program (SNAP) or the Organizational Maintenance Management System-Next Generation (OMMS-NG). Current designated Level 3 SLR equipment include:

EQUIPMENT	SEI
Trident Command and Control Systems	C
LM2500 Gas Turbine Engine	L
Aircraft Launch & Recovery Equipment Maintenance Prog.	M
IM-239/WDQ Radiac Air Particle Detector	R
Commercial Off-the-Shelf (COTS) equipment	T
SURFMINEWARFARE designated equipment	W
Isotta Fraschini Diesel Engine	Y
Navy Extremely High Freq. Satellite Communications Prog.	Z

3-5.3 Level 3 Specialized Reporting Template

Unique Level 3 Specialized Reporting templates are created by NAVSEALOGCEN Mechanicsburg, the NAVSEA 04RM SLR technical agent, and forwarded to applicable desired activities via a special software application within the CDMD-OA umbrella. The template serves as a data entry vehicle for the collection of information on the specified unique SLR additional elements. SLR templates are forwarded/loaded to applicable activities via the standard Automated Shore Interface (ASI) process.

3-5.4 SLR Nominations/Deletions/Changes

Nominations for adding equipment to SLR, recommendations for deleting equipment from SLR, and requests for changing either the Level 3 template and/or the SEI settings are normally originated by a TYCOM/SYSCOM (or designated ISEA). If originated by a TYCOM, the nomination/deletion/change request should be submitted via the cognizant SYSCOM (or designated ISEA) exercising technical control over the designated equipment. If the nomination is originated by a SYSCOM (or designated ISEA), the SYSCOM is responsible for obtaining the concurrence of all TYCOM's having reporting units prior to submitting the nomination.

The requestor must nominate the equipment that is to be included on SLR, and approval must be received, from NAVSEA 04RM. Nomination requests for an equipment to be added to SLR should include:

a. Justification of the need for adding the equipment to SLR

b. Evidence the fleet has the capability to input the requested unique data

c. A statement confirming that necessary resources are available and budgeted to perform in-depth analysis of MDS data on the nominated equipment

d. Identification of the appropriate UIC/RIN combinations

e. Specification of the desired SLR category (Level 1, 2, or 3)

f. Level 3 Specialized Reporting nominations should also include the identification of desired unique data elements to be incorporated into a template

g. Equipment nominated for SLR should also have formal TYCOM concurrence

Nominations may be submitted via the internet either through the NAVSEALOGCEN website (www.nslc.navsea.navy.mil), or directly on the Distance Support Anchor Desk site (www.anchordesk.navy.mil). Select "Talk to Someone Now" to place a phone call to the Navy Integrated Call Center requesting SLR nomination information, or select "Submit a Request" to make a formal request.

Before an equipment will be approved there should be evidence the fleet has the capability to report on the requested unique data, and that the SYSCOM's possess the capability necessary to analyze the collected SLR data.

Upon approval from NAVSEA 04RM the requestor is responsible for providing the NAVSEALOGCEN Mechanicsburg point of contact with the desired data elements for which data is to be collected, and the requestor is also expected to collaborate with the NAVSEALOGCEN Mechanicsburg representative in designing an appropriate unique template.

The nominator is also expected to assist in identifying all applicable UIC/RIN combinations that are to receive an appropriate SEI value in the configuration record in CDMD-OA, and in the applicable onboard equipment file.

3-5.5 SLR Data Analysis

Collected unique SLR data is available for review, analysis, or problem identification through the Ships' 3-M system via the OARS. Separate data tables will be established, on each SLR equipment, for data storage within Ships' 3-M. Current as well as historical data will be available for downloading from each of these SLR tables. The Ships' 3-M application allows for the capability of joining the SLR data table with the other standard tables. If assistance is required in obtaining SLR data from Ships' 3-M contact the Distance Support Anchor Desk, and ask for the NAVSEALOGCEN Mechanicsburg SLR representative.

3-5.6 SLR Record Identification in CDMD-OA

CDMD-OA, as the master database, provides activities with the capability to download all records that are considered SLR, for a given specific activity. For assistance contact the Distance Support Anchor Desk for the NAVSEALOGCEN Mechanicsburg SLR point of contact.

3-5.7 Three-year Limitation

As a general rule equipment will automatically be removed from SLR after a period of three years. Every effort will be made to notify the original nominating requestor as the three-year limit is approaching. The nominator will be requested to submit a justification for retention of the equipment on SLR. Equipment can be deleted, upon making a request to the NAVSEALOGCEN Mechanicsburg point of contact, at any time during the three-year period when it has been determined that sufficient information has been collected.

3-5.8 Semiannual Update

SYSCOM’s having technical control of the specific equipment are strongly urged to provide applicable TYCOM’s/FLTC’s with a semiannual update outlining the status of SLR data collection efforts, the status of identified problems (with possible solutions), and a plan of action for resolution of problems. SYSCOM’s are responsible for informing applicable TYCOM’s/FLTC’s if the SLR data is not being received. If data is not being received the SYSCOM should provide both the TYCOM and FLTCINC an in-depth analysis of why not, and recommend either the equipment continue as an SLR item or be deleted.

3-6 SCREENING AND SUBMISSION PROCESS

All maintenance actions are required to be documented by this instruction will be screened for accuracy and completeness. Any material requests that support a maintenance action shall be assigned the identical JCN of that action and contain complete and accurate information. MDS documents, except supply documents, shall be screened and transmitted off the ship as directed by TYCOM. Figure 3-2 is an illustration of a sample letter of transmittal for 3-M documents submitted by non-automated activities to the supporting ADP facility. The timeliness of submission and the accuracy of the maintenance information reported as required by 3-M are critical to the management of shipboard material deficiencies. The ship must have an up-to-date and useful CSMP showing the material condition of the ship for each work center. The CSMP provides the TYCOM with the means of determining urgent repairs for scheduling tender availability, shipyard overhauls, or restricted availability.

3-6.1 Transaction and Error Report

When information is entered into the computer at the supporting ADP facility a Transaction and Error Identification Report is generated. A letter of transmittal will be generated and sent from the data processing activity to the originator for review and take corrective action as necessary. The 3-M Coordinator is responsible for evaluating and resolving errors in the CSMP.

3-7 CURRENT SHIP'S MAINTENANCE PROJECT (CSMP)

The purpose of the CSMP is to provide shipboard maintenance managers with a consolidated listing of deferred maintenance to identify the material condition of the ship. A complete master CSMP may be held by the ship or other location as directed by TYCOM. The CSMP includes, but is not limited to:

a. The "automated CSMP" which is the computer-produced listing of deferred maintenance and alterations that have been identified through the submission of OPNAV 4790 documents. In addition to the maintenance actions added by ship's force, outside activities may request that they be allowed to add items to the CSMP.

b. The suspense file of OPNAV 4790 documents for maintenance items that have been submitted but are not reflected in the CSMP reports, or have not appeared in the MDS Transaction and Error Identification Report as having been accepted.

c. The Work Candidate/Job Sequence Number (Work candidate/JSN) Log which is the work center's list of all material discrepancies to be corrected either by ship's force or an outside activity.

Each Work Center Supervisor is responsible for ensuring that the CSMP accurately describes the material condition of the Work Center. Requirements for maintaining the CSMP are by TYCOM direction.

3-7.1 CSMP Aboard Ship

The CSMP is utilized as follows:

a. The ship's Commanding Officer and Executive Officer use the CSMP reports to:

(1) Determine the effects of deferred maintenance that limit the ship's capability

(2) Potential casualty report (CASREP) situations

(3) The material condition of each individual work center

(4) What kind and how much outside assistance is needed to complete the deferred maintenance

(5) Weakness or shortages in skill levels and/or resources required to do the deferred maintenance

(6) What kind of upkeep and cold iron time needed by the ship for maintenance

b. The Department Head/Division Officer uses the CSMP reports for the same information as the Commanding Officer and

Executive Officer, but may be restricted to their applicable department/division rather than the entire ship. CSMP reports can assist them in determining plans of action for accomplishing the deferred maintenance and evaluating the performance of work center supervisors in the management of their work centers.

c. The Work Center Supervisor uses the CSMP reports for managing the work center maintenance.

3-7.2 CSMP Use by Outside Activities

There are other activities that use CSMP reports for financial, industrial, operational, and analytical purposes in support of ships. The CSMP is used to plan for repair action in support of individual ships, especially for repair actions requiring a long lead-time. The unit's chain of command uses it to review and provide directions and recommendations concerning a ship's maintenance problems in relation to tender availability, etc.. Type commanders use the CSMP to determine force-wide maintenance problems and trends to develop future maintenance budgets and scheduling of availability. SYSCOMs use it to determine fleet-wide maintenance problems and trends in order to initiate corrective actions (redesign, substitutions, increased support, etc.)

3-7.3 Automated CSMP Reports

Current automated systems produce both summary and detail printed CSMP reports. Since software applications may differ, check the applicable system's user manuals and guides for available report formats. CSMP reports are produced in a variety of options, with selected sequences and totals. Summary reports are single-line summaries of the uncompleted deferred maintenance actions in the CSMP and are available by type availability, work center, INSURV number, safety-related deficiencies and EIC. Detail reports show the complete record for these actions. CSMP detail reports call for sorts by JCN, EIC, and by SWAB.

4790

Ser/Orig Code

Date

From: (Submitting Activity)
To: Commanding Officer (Applicable Data Processing Facility)
Via: Applicable TYCOM (optional by TYCOM direction)

Subj: SUBMISSION OF 3-M DOCUMENTS

Ref: (a) OPNAVINST 4790.4D

Encl: (1) MDS Documents

1. Per reference (a), enclosure (1) is forwarded for processing. The following information is provided:

a. Unit Identification Code:

b. Number of Deferred Maintenance Actions:

c. Number of Completed Maintenance Actions (2Ks): (Non-configuration changes)

d. Number of Completed Maintenance Actions (CKs): (Configuration changes)

e. Number of Correction Documents:

f. Total number of documents submitted:

(Signature by direction)
3-M Systems Coordinator

Figure 3-2: Letter Transmittal from Non-automated Activities

3-7.3.1 CSMP Summary Reports

CSMP Report 1 (produced in six options). Each option presents a single line summary of each non-completed deferred maintenance action:

a. "Summary by Type Availability", is provided on an "as requested" basis. This report provides a single-line description of each deferred maintenance action sequenced by ship, work center, type availability, and JSN. A work center summary line on the CSMP provides the number of man-hours, by IMA, depot, and ship's force. At the end of the report is a summary of estimated man-hours by type availability for each work center and department, and a line for the ship total.

b. "Summary by Work Center", available on an "as requested" basis contains the same information as Option A, but sorted by SHIP, WORK CENTER, and JSN.

c. "Summary by INSURV Number", is provided routinely to the ship as directed by TYCOM after an INSURV inspection. It is restricted to only those items on the CSMP that has been assigned an INSURV number that is sequenced by the ship, INSURV number, work center, and JSN. It contains similar information to Option A. Man-hour estimates and summaries are not shown.

d. "Summary by Safety Related Deficiencies", available on an "as requested" basis is restricted to only those actions listed on the CSMP which have been assigned a safety hazard code. Sequenced by ship, work center, type availability, and JSN, it contains the same information as Option A for safety-related deferred maintenance actions. No man-hour estimates, summaries, or list of additions and deletions are shown.

e. "Summary by EIC", available on an "as requested" basis is sequenced by ship, EIC, work center, JSN and contains the same information as Option A, and includes man-hour estimates summarized in EIC sequence at the system level.

f. "Summary by INSURV Number and Type Availability", available on an "as requested" basis contains the same information as Option C sorted in a ship, INSURV number, type availability sequence.

g. "Summary by SWAB/SWLIN", available on an "as requested" basis contains the same information as option “A”

including only those JCNs that have a SWAB/SWLIN assigned. The information is sorted by ship, SWAB/SWLIN, Work CENTER/JSN.

3-7.3.2 CSMP Detailed Reports

CSMP Report 2 (produced in three options). Each option presents detailed information regarding the ship's deferred maintenance.

a. "Detail Listing by JCN" displays a detailed record of the ship's deferred maintenance by JSN within the work center. If a deferred maintenance action has been documented as a safety hazard, the words "SAF HAZ" appear in the "comment" column. If the maintenance action has been assigned an INSURV number, this number will appear in the "comment" column.

b. "Detail Listing by SWAB" displays a detailed record of the ship's deferred maintenance by SWAB. If a deferred maintenance action has been documented as a safety hazard, the words "SAF HAZ" appear in the "comment" column. If the maintenance action has been assigned an INSURV number, this number will appear in the "comment" column.

c. "Detail Listing by EIC", is sequenced by JSN within a work center within an EIC.

3-8 Shipboard Assessment of MDS Performance

The Commanding Officer is responsible for the assessment of MDS performance onboard their command. The Commanding Officer may request assist visits from the type commanders who can recognize problems the command may be having difficulty in effectively identifying, scheduling, performing, and documenting maintenance actions. For problems identified, corrective actions can be recommended by the TYCOM.

To effectively manage and control the accomplishment of corrective maintenance, it is essential that the MDS system is accurately used and corrective maintenance correctly reported. The ability of ship's maintenance personnel to initiate complete and accurate MDS documents is the cornerstone of the MDS program. The TYCOM MDS assist visit will focus on the MDS administration and use of the CSMP. MDS assist visit objectives are to:

a. Ensure that the shipboard SCLSIS file matches installed equipment.

b. Ensure that Logistics Support Data (LSD) matches installed equipment.

c. Verify the CSMP provides correct information to allow effective planning and estimating of deferred maintenance actions.

d. Ensure that Shipboard pre-transmittal review, up-line reporting and ASI processing (COSAL maintenance processing for non-automated ships) is accomplished in a timely manner.

(ACTIVITY LETTERHEAD)

4720
Ser/Orig. Code

Date

From: (Originating Activity)
To: Ship's Name

Subj: CERTIFICATION OF ALTERATION INSTALLATIONS DURING AVAILABILITY (include date range of availability)

1. The following alterations are certified installed. The listed alterations meet the requirements of the issuing agency as instructed, and include all required Logistics Support Documentation.

3-M WC/JSN	ALTERATION NO.		DESCRIPTION	A/T
(For example only):				
DXSA 0054	SADDG 00045	K	MISSILE LAUNCH INSTL	5B
EXSA 3994	SADDG 01003	K	SSTG INSTL	5B
EXSA 4007	SADDG 01675	K	HPAC RPLCMNT	5B

By direction

Signature block

Copy to:
(Cognizant TYCOM)
COMNAVSEASYSCOM (Cognizant Code)

Figure 3-3: Certification of Alteration Installation (Sample Letter)

(SHIP'S LETTERHEAD)

4720
Ser/Orig. Code
Date

FIRST ENDORSEMENT on NSY ltr 4720 Ser/Orig Code of (Date of ltr)

From: (Ship's Name)
To: (Supporting Activity, e.g., IUC, RSG, etc.)

Subj: CERTIFICATION OF ALTERATION INSTALLATIONS DURING AVAILABILITY (include date range of availability)

1. Request the alterations reported completed by basic correspondence be processed as completed deferrals in the Master CSMP.

By direction

Signature block

Copy to:
(Cognizant TYCOM)
COMNAVSEASYSCOM (Cognizant Code)

Figure 3-4: 1st Endorsement to Alteration Certification Letter

MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

SECTION I

Chapter 4

SHIP INACTIVATIONS, REACTIVATION, STRIKE, OR TRANSFER TO FOREIGN NAVIES

SECTION I

Chapter 4

REFERENCES

REFERENCE	INSTRUCTION NO.	SUBJECT
(a)	OPNAVINST 5510.1H	DEPARTMENT OF THE NAVY INFORMATION AND PERSONNEL SECURITY PROGRAM REGULATION
(b)	SECNAVINST 4900.48A	TRANSFER OF U. S. NAVAL VESSELS TO FOREIGN GOVERNMENTS AND INTERNATIONAL ORGANIZATIONS

SECTION I

Chapter 4

SHIP INACTIVATIONS, REACTIVATIONS, STRIKE, OR TRANSFER TO FOREIGN NAVIES
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CHAPTER 4

SHIP INACTIVATIONS, REACTIVATION, STRIKE, OR TRANSFER TO FOREIGN NAVIES

4-1 OBJECTIVE

This chapter provides procedures for the orderly termination of the shipboard maintenance and material management (3-M) system, and the disposition of 3-M system material and software upon the decommissioning for inactivation/strike of ships, or transfer of ships to a foreign navy. It also provides procedures for re-implementation of 3-M systems upon ship reactivation.

4-2 SHIP INACTIVATION OR CONVERSION

4-2.1 Planned Maintenance System (PMS)

The Fleet Technical Support Centers, Atlantic/Pacific (FTSCLANT/FTSCPAC as applicable) shall maintain a current PMS Master File of the ship scheduled for decommissioning.

FTSCLANT/FTSCPAC, as applicable, will hold the PMS Master File in suspense until such time as a decision is made to reactivate or strike. A copy of the PMS Master File shall be forwarded to the applicable inactive ship maintenance facility.

The ship shall phase out PMS coverage of equipment in concert with the decommissioning plan. PMS actions must continue to be accomplished on fire fighting equipment and other personnel safety items/equipment until all ship's force personnel are permanently berthed ashore and/or on their assigned berthing barge (as applicable).

Removal and reissue/disposal of related hardware, software, and documentation (computers, printers, CD's, instructions etc.) not specifically addressed within the ship's decommissioning plan shall be accomplished by Type Commander (TYCOM) direction.

Procedures specified in reference (a) shall be followed for the disposal of classified and/or unclassified PMS material.

4-2.2 Maintenance Data System (MDS)

The TYCOM shall ensure a complete Automated Work Request (AWR) package is provided by the ship to the Navy Inactive Ship

Maintenance Facility (NISMF) prior to reporting to the applicable NISMF.

The ship inactivation crew shall review and correct the CSMP. Any additional deferred maintenance shall be documented and processed for inclusion into the Current Ship's Maintenance Project (CSMP).

The ship shall inform the TYCOM when the last activation deferrals and completed inactivation/maintenance actions have been submitted.

The ship shall produce and forward the final upline CSMP with a hard copy given to the applicable NISMF for retention until subsequent reactivation. The ship shall forward CSMP backups including a COSAL backup to the CDM.

NOTE

The material history will be maintained at the Naval Sea Logistics Center (NAVSEALOGCEN).

The applicable inactive ship maintenance facility will maintain a ship condition status (local records) for the ship's inactive period.

In the event equipment in a deferred maintenance status is transferred to another activity for use, the applicable inactive ship maintenance facility will provide the receiving activity with that part of the CSMP pertinent to the equipment transferred.

4-3 SHIP REACTIVATION

Upon notification that an inactive ship shall be reactivated, the procedures below shall be followed.

4-3.1 PMS

Restoration of PMS coverage for FMS will be at the discretion of the customer via the appropriate ship transfer program office. Upon notification, FTSCLANT/FTSCPAC shall retrieve and forward a copy of the applicable PMS Master File from the suspense file to the ship being reactivated. The same PMS installation procedures specified for new construction/conversion shall be followed.

4-3.2 MDS

The TYCOM shall notify NAVSEALOGCEN of the ship's reactivation and administrative command assignment.

NAVSEALOGCEN will provide the ship's material history from outstanding deferrals in the NAVSEALOGCEN data bank and forward it to the automatic data processing (ADP) center serving the appropriate TYCOM.

The supporting ADP center will reactivate the ship's material history and provide documentation of all open deferrals which were outstanding at the time of decommissioning.

4-4 SHIP STRIKE

Upon notification that an active ship is to be decommissioned and stricken, the procedure below shall be followed.

4-4.1 PMS

The ship shall phase out PMS coverage of equipment in concert with the decommissioning plan. PMS actions must continue to be accomplished on fire fighting equipment and other personnel safety items until all ship's force personnel are permanently berthed ashore and/or on their assigned berthing barge (as applicable).

Removal and reissue/disposal of related hardware, software, and documentation (computers, printers, CD's, instructions etc.) not specifically addressed within the ship's decommissioning plan shall be accomplished by TYCOM direction.

Procedures specified in reference (a) shall be followed in the disposal of classified and/or unclassified PMS material.

4-4.2 MDS

The ship shall stop MDS reporting 2 months prior to its decommissioning date. A complete CSMP and COSAL will be sent to the ship's Configuration Data Manager (CDM) at that time.

4-5 TRANSFER TO A FOREIGN NAVY

Upon notification of an operational (“hot ship”) transfer to a foreign navy, the following procedures will be followed.

4-5.1 PMS

The ship will continue PMS actions as directed by the Transfer Plan. Normally PMS actions will continue until decommissioning for additional use in training the foreign transfer crew.

Removal and reissue/disposal of related hardware, software, and documentation (computers, printers, CD's, instructions etc.) not specifically addressed within the ship's decommissioning plan or the Transfer Agent’s Transfer Plan (reference (b), paragraph 8.e) shall be accomplished by TYCOM direction.

Procedures specified in references (a) and (b) shall be followed in the disposal of classified and/or unclassified PMS material and other technical documentation that does not apply to the approved transfer configuration of the ship. Normally the Transfer Agent will assist the ship’s force in the identification, removal and destruction of this material.

4-5.2 MDS

Two weeks prior to transfer, the ship shall document all outstanding maintenance for inclusion in the CSMP. The ship shall forward a copy of the ship's database (including COSAL) to its CDM.

At the time of transfer, the TYCOM shall provide a CSMP to the designated representative responsible for the transfer.

The ship's material history report shall also be provided at the time of transfer to the designated representative, if requested.

MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

SECTION II

CHAPTER 1

INSURV INSPECTION PROCEDURES

SECTION II

CHAPTER 1

REFERENCES

REFERENCE	INSTRUCTION NO.	SUBJECT
(a)	OPNAVINST 4730.5 SERIES	TRIALS AND MATERIAL INSPECTIONS (MI) OF SHIPS CONDUCTED BY THE BOARD OF INSPECTION AND SURVEY
(b)	SECNAVINST 5040.3 SERIES	INSPECTIONS WITHIN THE DEPARTMENT OF THE NAVY
(c)	CINCLANTFLT/CINCPACFLT INST 4790.3 SERIES	JOINT FLEET MAINTENANCE MANUAL

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SECTION II CHAPTER 1
INSURV INSPECTION PROCEDURES

1-1 PURPOSE

This chapter describes the Maintenance and Material Management (3-M) related actions required prior to, during, and following an inspection conducted by the Board of Inspection and Survey (INSURV).

1-2 INSURV MISSION

The Board of Inspection and Survey (INSURV) was established by Congress as a board to advise the Secretary of the Navy regarding acceptance of newly constructed ships and to periodically examine naval vessels and make recommendations to the Secretary if any should be stricken from the Naval Vessel Register. Per references (a) and (b), INSURV has been tasked with added specific functions including the following:

a. determining vessels fitness for further service,
b. identifying material conditions that limit performance, compiling statistical information, and
d. providing assurance to higher authority that mechanisms to identify, document and resolve material deficiencies are adequate and that these systems are being judiciously executed.

The examination of naval vessels is conducted as a Material Inspection (MI), which consists of operational tests or demonstrations of major systems and equipment. The formative basis for the MI is a command’s own self-awareness to its material condition and readiness. It is therefore incumbent upon each command being inspected to demonstrate a thorough knowledge of its material condition through accurate records and operational demonstrations.

1-3 INSURV DOCUMENTATION PROCEDURES

The INSURV Board prepares material deficiency documents to record conditions found during the inspection. These inspection deficiency items will be written on OPNAV/2Ks to be reviewed and later input into the Maintenance Data System. At approximately six (6) weeks prior to the scheduled MI and to aid in inspection preparation, ship’s force should review the preparation guidelines available at INSURV’s homepage

http://www.spawar.navy.mil/fleet/insurv/. The ship being inspected will prepare material deficiency documents as directed within reference (c). It is especially noteworthy that at the INSURV website are details regarding recent material problem areas and trends. Ship's force should routinely take advantage of this information to learn and correct material problems/trends that are being discovered elsewhere.

1-4 PROCEDURES BEFORE INSURV INSPECTION

1-4.1 Ship Responsibilities

The specific actions of the Commanding Officer and ship's force are noted in reference (c). The INSURV inspection provides an opportunity for the ship to demonstrate a high material self-awareness as reflected in accurate documentation of it's deficient conditions (CSMP, CASREPs). The ship's 3-M Coordinator along with Work Center Supervisors should routinely be reviewing work candidates that are old, appear duplicated or have repairs completed to ensure they are appropriately removed from the CSMP. Additionally, standard equipment operating procedures are expected to be current and easily executed when called upon by board members.

1-4.2 Intermediate Unit Commander (IUC)/Immediate Superior in Command (ISIC)

Specific actions are denoted within reference (c). The IUC/ISIC shall pay particular attention to ensuring that the mechanisms to identify, document and correct material deficiencies identified by ship's force or others are accurately reflected within the CSMP. Additionally, the IUC/ISIC should ensure that deficiencies are being continuously prosecuted and adjudicated with the appropriate priority and assignment.

1-4.3 Deficiencies to be Reported

Per reference (c), the CSMP is "the sole source of work to be accomplished by industrial activities, FMA's, and organizational level activities" and therefore should reflect the deficient material items requiring maintenance action. Reference (c) outlines expected items to be noted within the CSMP.

1-5 PROCEDURES DURING INSURV INSPECTION

Documentation of INSURV inspection deficiencies will be accomplished in accordance with reference (c).

1-6 INSURV NUMBERING PROCEDURES

INSURV will assign numbers to applicable deficiencies identified during inspection. The following paragraphs describe the input to the appropriate BLOCK NUMBERS of the OPNAV 4790/2K numbering system.

1-6.1 INSURV Assigned Numbers (Blocks 19-24)

The INSURV number is assigned to each deficiency identified during an inspection or trial to:

a. Uniquely identify a deficiency;
b. Indicate the relative importance of a deficiency;
c. Identify special classes of deficiencies; and
d. Specify required time of correction by "starring" deficiencies (Acceptance Trials only).

*	1	K	0	0	1	H	B	

BLOCK NR: 19 20 21/22/23/24

1-6.1.1 Starred Cards (Block 19)

Asterisks (stars) designate a completion requirement and are used on Acceptance Trials (AT), Underway Trials (UT), Combined Trials (CT), and Guarantee Material Inspections (GMI).

1-6.1.1.1 Single Starred Deficiencies: (*)

A deficiency which, in INSURV's judgment, requires resolution or waiver by the CNO before the ship is delivered to the Navy and which:

(a) Significantly degrades a ship's ability to perform an assigned primary or secondary Required Operational Capability (ROC);

(b) Prevents the crew from safely operating or maintaining ship systems;

(c) Prevents the crew from safely living or messing on board;

(d) Precludes safe navigation, effective damage control or fire fighting operations, or adequate physical security; or

(e) Prevents the ship from complying with environmental or NAVOSH regulations.

1-6.1.1.2 Double Starred Deficiencies: (**)

A deficiency applicable only to ships constructed, converted, or modernized with a separate fitting-out period assigned away from the building site, and represent a deficiency which, in INSURV's judgement, requires resolution or waiver by the CNO prior to the ship's departure from the building yard.

1-6.1.2 INSURV Identification Number (BLOCK 20).

The seven spaces of this block are filled in as follows:

1	K	0	0	1	H	B
1	2	3	4	5	6	7

1-6.1.2.1 Importance (Space One)

A numeral located in Space One indicates the relative importance of the deficiency. This is called the "PART" number and the number can be either PART 1, 2, or 3.

1-6.1.2.1.1 PART 1

PART 1 deficiencies are those that in INSURV’s judgment are likely to:

- Cause the ship to be unseaworthy, or

- Substantially reduce the effectiveness of personnel or essential material, or

- Reduce the ability of the ship to carry out its assigned mission or to perform in a primary mission area, or

- Cause injury to personnel or damage to vital material. This includes significant deficiencies to the ship's safety equipment and devices.

1-6.1.2.1.2 PART 2

PART 2 deficiencies are those that in INSURV’s judgment are less important and do not meet the criteria for a PART 1 deficiency, but should be corrected to restore the ship to required specifications.

1-6.1.2.1.3 PART 3

PART 3 deficiencies are those that in INSURV's judgment will require either a major alteration to correct (design related) or modifications that are too costly to effect during the life cycle of the ship (i.e., passageway too narrow, overhead too low, insufficient equipment). These are documented to identify design changes required on future ships. These deficiencies are generally coded "9(in BLOCK 45 (TYCOM SCREENING) and passed to machinery history files. The deficiency will appear on the INSURV deficiency list. PART 3 deficiencies may include:

- Items beyond current technical authority but which should be corrected in future ship designs, or

- Items not in compliance with current technical authority but may be impractical and/or too costly to correct on the ship inspected, or

- A recommended alteration or addition that would be beneficial but for which there is no written requirement or reference. Such a deficiency will also be designated "A" for "alteration" in space 2 as explained in the next section, or

- Information used by INSURV for statistical analysis or documentation purposes.

1-6.1.2.2 Responsibility (Space Two)

The single capital letter "K", "G," or "A" is used to indicate responsibility for corrective action. This space should normally be left blank, and the designations "K" or "G" are used by INSURV on new construction trials and may be later modified by Program Managers and/or Supervisors of Shipbuilding based on review of construction contracts. The following definitions apply to "A", "K" and "G" designations:

- "K" indicates that, in the reviewer's opinion, correction of the deficiency is the responsibility of the contractor because he or his subcontractors or vendors failed to meet the requirements of the contract.

- "G" indicates that in the reviewer's opinion correction of the deficiency is the responsibility of the government.

- "A" designates an "Alteration Card" which requires a design action or configuration change not authorized or not yet accomplished on the ship inspected. This may include applicable

SHIPALTs, ORDALTs, MACHALTs, Field Changes, or other configuration changes that are not complete or not scheduled for this hull, recommended alterations not previously documented, and/or changes which require design action by NAVSEA. Alteration Cards should include recommendations for how correction can be accomplished either by referencing a previously engineered alteration or by detailing possible corrective action in the remarks section. A PART 3 Alteration Card (“3A”) indicates a change that might contribute to the ship, but because of the ship’s age or other consideration is unlikely to be accomplished or is low priority. A PART 3 Alteration Card (“3A”) could indicate an area where an older ship does not comply with current specification, standards or instructions, but that the effort to engineer and install the required changes are unlikely due to cost or other factors. INSURV expects that a “3A” deficiency will be passed to history without action on the ship being inspected.

1-6.1.2.3 Sequential Number (Space 3, 4, and 5)

This is a sequential number or alphanumeric assigned to each deficiency by INSURV which, along with the department code, uniquely identifies each deficiency.

1-6.1.2.4 Department (Space 6 and 7)

A combination of two capital letters is used to identify the INSURV department having primary cognizance as follows:

DEPARTMENT	SYMBOL	DEPARTMENT	SYMBOL
ASW	AS	INFORMATION SYSTEMS	IS
AVIATION	AV	MEDICAL/DENTAL	MD
AUXILIARIES	AX	MINE COUNTERMEASURES	MN
BOILERS	BR	MAIN PROPULSION	MP
COMM, COMMAND & CONTROL	CC	NAVIGATION	NV
DAMAGE CONTROL	DC	OCCUPATIONAL SAFETY	OH
DECK	DK	OPERATIONS	OP
DIVING	DV	REPAIR	RP
ELECTRICAL	EL	REACTORS	RX
ENVIRONMENTAL PROTECTION	EP	SUPPLY	SP
HABITABILITY	HP	WEAPONS	WP

1-6.1.3 SUFFIX (BLOCK 21)

In special cases, a one letter Suffix is included after the INSURV number to further identify subsets of an INSURV item.

1-6.1.4 MISSION DEGRADE (BLOCK 22)

This block identifies certain PART 1 deficiencies that are considered as preventing the ship from carrying out some part of its mission, and is filled in with "U" when applicable.

1-6.1.5 SAFETY (BLOCK 23)

The suffix "S" is added to indicate that this deficiency is identified as a safety hazard.

1-6.1.6 RELIABILITY/MAINTAINABILITY (Block 24)

The suffixes “R” and “M” are added by INSURV to indicate:

- “R” is assigned to deficiencies related to an equipment or component that displays low reliability requiring frequent corrective maintenance or replacement.

- “M” is assigned to indicate that the equipment or component requires excessive maintenance, that the deficiency is related to the Planned Maintenance System (PMS), or that the deficiency represents a problem with Integrated Logistics Support.

1-7 PROCEDURES AFTER INSURV INSPECTION

Post INSURV action items are outlined in reference (c). Due to its importance, note the action to appropriately CASREP applicable “PART 1” deficiencies. A “PART 1” deficiency is an important deficiency that is likely to:

a. cause the ship to be unseaworthy,
b. substantially reduce the ability of the ship to carry out an assigned mission,
c. substantially reduce the effectiveness of personnel or essential material, and/or
d. cause serious injury to personnel or serious damage to important material.

This includes significant deficiencies to the ship’s safety equipment and devices.

As noted in reference (c), INSURV and the TYCOM will work collaboratively to input inspection deficiencies into the CSMP within 30 days of MI completion.

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SECTION II

CHAPTER 2

ASSIST VISITS AND TYCOM ASSESSMENTS

SECTION II CHAPTER 2

REFERENCES

REFERENCE	INSTRUCTION NO.	SUBJECT
(a)	CINCLANTFLT/CINCPACFLT INST 4790.3 SERIES	CINCLANTFLT/CINCPACFLT JOINT FLEET MAINTENANCE MANUAL

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ASSIST VISITS AND TYCOM ASSESSMENTS

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SECTION II CHAPTER 2

ASSIST VISITS AND TYCOM ASSESSMENTS

2-1 INTRODUCTION

The Ships' 3-M System enhances force readiness and helps identify material problems. TYCOMs are responsible for ensuring that each command under their cognizance effectively uses the 3-M system. When the 3-M system is effectively used, a higher degree of equipment readiness will be achieved. Through assessments of the 3-M system and assist visits, TYCOMs can recognize problems the command may be having in effectively identifying, scheduling, performing, and documenting maintenance actions. For problems identified, corrective action can then be initiated.

Each TYCOM will establish, train, and maintain a team consisting of qualified 3-M system coordinators responsible for monitoring PMS installations, providing assistance when requested, and performing 3-M assessments.

2-2 ASSIST VISITS

The TYCOM shall schedule assist visits to each ship as requested. The purpose of an assist visit is to aid managers by determining how efficiently the command's 3-M program is operating, and help identify areas with potential problems. The assist team will take the appropriate measures to identify the areas that need attention and the type of assistance desired. An assist visit is instructional and provides training and assistance to the requesting activities.

Assistance in the form of briefings or group discussions shall be provided to clarify any problems that become apparent during an assist visit. Each assist visit shall include a debriefing period with the commanding officer prior to concluding the visit. These assist visits will include advice concerning management of PMS and MDS, as well as advice regarding other significant 3-M system problems.

2-3 TYCOM ASSESSMENTS

The purpose of an assessment is to determine the effectiveness of the command's 3-M program in managing the accomplishment of the maintenance. A TYCOM assessment is a comprehensive audit of the Ships' 3-M Program. Emphasis is to be given to the effectiveness of maintenance management and maintenance accomplishment. Included in the assessment will be the adequacy of the PMS installation and the effectiveness of the shipboard training program.

TYCOMs shall conduct, at intervals of not greater than 24 months, a comprehensive assessment for each ship and applicable shore activity to determine the effectiveness of the 3-M program. A grade of less than 80 percent for any assessment area (PMS Performance Rate (PPR), MDS Performance Rate (MPR), and 3-M Performance Rate (3MPR)) is considered unacceptable. An assessment will not be converted to an assist visit for any reason.

To ensure standardization of the measurement of 3-M program performance, and to enhance communications at all levels of command, the procedures described herein are the minimum to be adhered to during assessments. Refer to reference (a) and TYCOM maintenance instructions for Fleet assessment requirements, standard assessment definitions, and evaluation criteria and calculations for both PMS and MDS.

2-3.1 PMS Assessment

Proper PMS performance is critical to maintaining acceptable equipment performance levels required in today's tactical environment. Additionally, personnel and environmental safety is paramount in conducting routine preventive maintenance aboard ships. It is the Commanding Officer's responsibility to ensure the following PMS objectives are met in accordance with Fleet and TYCOM directives.

2-3.1.1 PMS Assessment Objectives

a. Ensure the PMS performed matches the installed equipment.

b. Ensure PMS completed was done correctly in accordance with the MRC. "Correctly" includes but is not limited to:

(1) safety precautions were observed,

(2) proper tools and materials were used,

(3) tag-out procedures were correct when applicable,

(4) if hazardous material (HAZMAT) was used, personal protective equipment used was applicable for the HAZMAT involved and in good material condition. HAZMAT disposal conducted correctly.

c. Analyze the recorded reasons for non-accomplishment of PMS to determine ship-wide and departmental trends, and actions taken to improve PMS.

2-3.2 MDS Assessment

Documentation and validation of MDS Data is the cornerstone of configuration management resulting in improved logistics and repair support aboard ship. MDS spot checks, similar to PMS spot checks, will be conducted. Refer to reference (a) and TYCOM maintenance instructions for Fleet assessment requirements, standard assessment definitions, and evaluation criteria and calculations for both PMS and MDS.

2-3.2.1 MDS Assessment Objectives

MDS Objectives include:

a. Shipboard Ships Configuration and Logistics Support Information System (SCLSIS) file matches installed equipment.

b. Logistics Support Data (LSD) matches installed equipment.

c. CSMP provides correct information to allow effective planning and estimating of deferred maintenance actions.

d. Shipboard pre-transmittal review, up-line reporting and Automated Shore Interface (ASI) processing (COSAL maintenance processing for non-automated ships) is accomplished in a timely manner.

2-3.3 Definitions

a. PMS Performance Rate (PPR). A numerical evaluation of the performance and documentation of planned maintenance.

b. MDS Performance Rate (MPR). A numerical evaluation of the performance and documentation of maintenance.

c. 3-M Performance Rate (3-MPR). A composite evaluation of the performance and documentation of PMS and MDS.

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CHAPTER 3

SUBMARINE PERFORMANCE MONITORING TEAM (PMT) MAINTENANCE AND INSPECTION PROCEDURES

SECTION II

CHAPTER 3

REFERENCES

REFERENCE	INSTRUCTION NO.	SUBJECT
(a)	OPNAVINST 3120.33B SERIES	SUBMARINE EXTENDED OPERATING CYCLE (SEOC) PROGRAM
(b)	OPNAVINST 4790.16	CONDITIONED-BASED MAINTENANCE (CBM) POLICY
(c)	CINCLANTFLT/CINCPACFLT INST 4790.3 SERIES	JOINT FLEET MAINTENANCE MANUAL

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SECTION II CHAPTER 3

SUBMARINE PERFORMANCE MONITORING TEAM (PMT) MAINTENANCE AND INSPECTION PROCEDURES

3-1 PURPOSE

This chapter describes the Maintenance and Material Management (3-M) related actions required prior to, during, and following an inspection and other maintenance monitoring conducted by the submarine Performance Monitoring Teams (PMT).

3-2 PMT MISSION

The Submarine Performance Monitoring Team (PMT) Program was established by the Chief of Naval Operations, per reference (a), as a method of collecting objective engineering evidence of ship system performance. This data was then used to allow the extension of shipyard overhauls to extend the operational cycle and useful life of the vessels, and align major maintenance. While this mission is still applicable today with the PMT’s ensuring safe and reliable Extension of Operating Cycles (EOC’s), the maintenance has also evolved into using Conditioned Based Maintenance (CBM) techniques to assess the performance of many critical submarine systems, primarily the submarine Hull, Mechanical, and Electrical Systems (HM&E). The inspections conducted by PMT aid in improving the submarine fleet’s material condition and operational readiness. They do this by aiding in early identification of system deficiencies and/or predicting failures before they occur and avoid more critical mission-limiting failures. The PMT Program also assists NAVSEA 07T in identifying and resolving fleet material issues, improving system reliability, reducing Total Ownership Cost (TOC), and assessing system health across the fleet. Other products of the program include major shipyard availability inputs for work package definition, special inspection programs defined in reference (c) like the Vibration Analysis Program, and other fleet assistance. NAVSEA 07T provides the technical oversight, technical documentation, requirements, and analysis for the PMT Program.

3-3 MAINTENANCE RESPONSIBILITY AND SCHEDULING

The maintenance requirements and inspections that are monitored by PMT are fully integrated in the ship’s PMS system. These Maintenance Requirement Cards (MRC’s) are coded with a “K” in

the “Other” column on the MIP. The scheduling and performance of this maintenance is the responsibility of the ship. PMT, using an advanced engineering data collection and analysis information system, will aid in the scheduling of this maintenance. It is recommended that the ship frequently bring a copy of the PMS cycle for the applicable work centers to the PMT to update their system. When an inspection is required, contact the local PMT site to schedule.

3-4 PMT DOCUMENTATION AND REPORTING

3-4.1 PMT CBM Deficiency Reports

The deficiencies and recommendations that result from a PMT inspection and monitored maintenance are published in an engineering memorandum called an On Site Analysis Report (OSAR). This material deficiency report is passed to the ship for corrective action and maintenance planning where applicable. In some cases, no repair action is required if a condition exists which is starting to degrade, yet does not meet repair conditions, so the OSAR is provided for information or other action like increased monitoring frequency. These OSAR’s are also uploaded to NAVSEA 07T’s database for advanced analysis and to aid in overall system health determination.

3-4.2 End of Monitoring Period (EMP) Reporting

Periodically, PMT will provide a summary report of the monitored maintenance for a summary closeout of the services and deficiencies provided and to aid in the planning of the next monitoring period. The ship’s “monitoring period” is a finite period of time usually corresponding to a patrol period for SSBN’s or aligned with maintenance availabilities taking the IDTC into account for the SSN’s. This monitoring period mirrors the ship’s PMS cycle.

3-5 DATA COLLECTED & TRENDED

The data collected per the datasheets attached to the “K” MRC’s, as well as the deficiency reports is entered into the PMT’s engineering analysis system and typically uploaded nightly to a main database. Over 5 years of data exists for the data that is collected. The website provides the ability to retrieve the data and export to excel spreadsheets as well as on line graphing of data that behaves in a predictable fashion. Ship’s Force and other organizations may request historical data through the local PMT site.

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SECTION III

Chapter 1

REPORTS AND SERVICES AVAILABLE FROM THE NAVAL SEA LOGISTICS CENTER (NAVSEALOGCEN)

SECTION III

REFERENCES

REFERENCE	INSTRUCTION NO.	SUBJECT
None.	No instructions referenced in SECTION III.	

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SECTION III

REPORTS AND SERVICES AVAILABLE FROM THE NAVAL SEA LOGISTICS CENTER (NAVSEALOGCEN)

1-1 3-M SYSTEM DATABASE

Ships' maintenance information is reported by fleet personnel to the Naval Sea Logistics Center (NAVSEALOGCEN), Mechanicsburg, PA, for processing into the Ships' Maintenance and Material Management (3-M) System Database. This database provides a single source of 3-M data available to NAVSEASYSCOM Program and Equipment Managers, In-Service Engineering Activities, TYCOMS, Ships, NAVSUPSYSCOM and government sponsored contractors.

1-2 DATA COLLECTED

Maintenance data reported and retained in the 3-M system database includes:

a. Completed maintenance

b. Deferred maintenance

c. Planning and Estimating information for shipboard and IMA

d. Repair parts

e. Configuration data

f. Intermediate Maintenance Activity data from:

(1) Tenders

(2) Repair shops

(3) Type Commander (TYCOM) Support Units

(4) Shore Intermediate Maintenance Activities (SIMAs)

g. Reactivated ships CSMPs

It must be recognized that the integrity of the database is relevant only to the accuracy of the data reported.

1-3 USES OF THE DATA

Information available from the 3-M Maintenance Data System can be of value in:

a. Scoping and quantifying data for engineering and logistics analyses.

b. Providing management resource information to higher authority to support the decision making process.

c. Planning and allocating resources for logistics support.

d. Analyzing maintenance/reliability problems.

e. Determining adequacy of equipment specifications.

f. Analyzing life cycle and other costs.

g. Determining equipment effectiveness.

h. Preparing and/or updating technical manuals/directives.

i. Providing work center equipment maintenance history.

j. Providing data assist provisioning.

k. Overhaul planning.

l. Analyzing repair parts usage.

m. Updating allowance lists and the Coordinated Shipboard Allowance List (COSAL).

n. Providing data for ship design.

o. Shipboard management including determination of problem equipment and providing data for availability and overhaul.

p. Analyzing part failures.

q. Displaying labor hours, parts cost, maintenance action count and the calculated ownership cost value for ships and equipment.

1-4 DATA ELEMENTS AVAILABLE IN THE 3-M SYSTEM

The MDS data elements, which are stored in the database are listed and defined in the Ships' 3-M Database Reference Manual, which can be downloaded from the NAVSEALOGCEN home page (http://nslc.navsea.navy.mil). The OPNAV 4790/2K, OPNAV 4790/CK, OPNAV 4790/2F, OPNAV 4790/2P, DD 1348 and NAVSUP 1250-1 Forms and 3-M ADP programs are used to report these data elements.

1-5 SHIPS' 3-M ON-LINE SYSTEM

The Ships' 3-M On-line database is a historical repository of corrective maintenance actions spanning 1990 through current date. It contains maintenance, supply and IMA data and allows the user to select, sort and/or process data as well as create reports. It provides the means to plan, acquire, organize, direct, control and evaluate manpower and material resources in support of maintenance. The Ships' 3-M On-line database is used to predict failure rates of components, determine areas that need improvement and track equipment performance. Access to 3-M data allows the user to research equipment history, perform trend analysis and provide a tool to the fleet that can provide information concerning fleet maintenance and maintenance support experience to organizations responsible for logistics support to the fleet. On-line access is available through NAVSEALOGCEN.

1-6 THE OPEN ARCHITECTURAL RETRIEVAL SYSTEM (OARS)

All members of the NAVSEA community, the Fleet, and others with access to SMARTLINK or TCP/IP telecommunications protocol, can access the database from their desktop computers by using OARS, a client software tool developed by the Naval Sea Logistics Center. OARS, an intuitive, flexible tool that operates in a Windows environment was designed to make retrieving maintenance and material management information quick and easy.

OARS generates most standard 3-M reports, such as Parts Issued For Maintenance Detailed Report and the 4790.S5019 Ships' 3-M History Report. Also, new reports are available now as standard reports, such as: 4790.L0103, 4790.L0104, 4790.L0105 Ownership Cost Reports, and 4790.L0300 Selected Level Reporting (SLR) Reports. The application can produce Ad Hoc reports, as well as import text, and download data. One can run reports in immediate or batch mode and save reports in various file formats, such as: Excel, text, dBase, etc.

To find out more about this tool, or to become an OARS user, visit the OARS web site at www.oars.navsea.navy.mil.

1-7 ON-LINE SYSTEMS TRAINING COURSE

The Ships' 3-M/OARS Basic Training Course is a two day course designed to introduce and train individuals on the basic usage of Ships' 3-M data as well as the OARS Retrieval Tool. This course is essentially broken into two main topic areas, Introduction and Overview of Ships' 3-M, and Introduction of the OARS Retrieval Tool. This training places an emphasis on hands-on computer lab time. Upon completion, students should have obtained a knowledge level, which will enable them to retrieve the data necessary for the specific functions desired. The course is conducted by NAVSEALOGCEN.

1-8 REPORT PRODUCTS

The Ships' 3-M Standard Reports Manual, available from NAVSEALOGCEN, displays samples and descriptions of the Ships' 3-M reports available through OARS. Potential users of ships' maintenance data should contact NAVSEALOGCEN for assistance if a desired product format is not listed in the Ships' 3-M Standard Reports Manual. If you have specific needs, which are not met within the standard reports, OARS provides the capability of developing customized ADHOC reports.

1-9 OTHER PRODUCTS

There are various products, which are available through the NAVSEALOGCEN Homepage, which provide valuable tools to the customer. These include:

a. Ships' 3-M Manual - OPNAVINST 4790.4D

An online version of the OPNAVINST 4790.4D. This instruction establishes CNO's policy, requirements, and responsibilities for the Ships' 3-M System. Instructions contained in this manual supersede any other directives, which may be in conflict

b. Ships' 3-M Reference

An online means to access reference information. This site offers users ability to access thirty-nine 3-M reference code tables. Each code table provides the definition and code translation for each entry in the table. The user has the ability to search each table by code, definition, or keyword. Additionally the user may use the “list” option to display the entire list of codes for a particular table. Where appropriate a hierarchical breakdown of the code is available.

c. The Maintenance Modernization Business Unit (MMBU) Standard Codes Forum

Standard Codes Forum contains a mirror image of all code tables implemented within the current releases of the Organization Maintenance Management System - Next Generation (OMMS-NG) and the Maintenance Resource Management System (MRMS), and the Regional Maintenance Automated Information System (RMAIS). It also serves as a communications link within the Naval Community where recommended changes, modifications and deletions are submitted, discussed and approved/disapproved prior to release version implementation.

d. Ships' 3-M Data Record Layout

Describes the format of all data records processed through the legacy Shipboard Non-Tactical ADP Program (SNAP) systems, which are found within Ships' 3-M.

e. Ships' 3-M Data Record Layout - 120 Card Format

Specifies the card format for all data records found within Ships' 3-M.

Additionally, for those customers not having accessibility to the Internet, a Ships' 3-M Reference CD, which contains some of the more significant reference tables, is available. The reference information available via the CD includes; Equipment Identification Codes (EIC), Allowance Parts List population(APL), Activity Status File/Steaming Hours, and Expanded Ship Work Breakdown Structure (ESWBS).

1-10 REQUESTING 3-M SYSTEM DATA

Data requests may be submitted by telephone to the customer support help desk, email, letter or message directly to NAVSEALOGCEN.

Information concerning Ships' 3-M as well as access to various Ships' 3-M products can be obtained through the NAVSEALOGCEN Homepage.

Any written correspondence to the NAVSEALOGCEN Customer Support Help Desk may be forwarded to:

Naval Sea Logistics Center
ATTN: N60 Logistics Data Systems Department
5450 Carlisle Pike
P.O. Box 2060
Mechanicsburg PA 17055-0795

Correspondence may be passed to NAVSEALOGCEN via the Internet by accessing the Customer Support Feedback Form.

To receive Ships' 3-M information via the telephone, contact should initiate with the Customer Support Help Desk:

	Commercial	DSN
Telephone	(717) 605-2043	430-2043
FAX	(717) 605-2669	430-2669

MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

SECTION IV

Chapter 1

3-M SYSTEMS TRAINING

SECTION IV

REFERENCES

REFERENCE	INSTRUCTION NO.	SUBJECT
None.	No instructions referenced in Section IV.	

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SECTION IV

3-M SYSTEMS TRAINING

1-1 INTRODUCTION

The ships' 3-M System consists of the Planned Maintenance System (PMS) and Maintenance Data System (MDS) and is the nucleus for managing maintenance aboard all ships and shore stations of the Navy. Personnel must have a clear understanding of: (1) how to effectively manage maintenance, configuration and logistics support appropriate to their position; (2) how PMS is essential to sustaining material readiness; and (3) how and why managers at the systems command level are dependent upon the 3-M System for information to identify and correct Fleet material problems.

The Naval Education Training Command (NETC) is responsible for maintaining a 3-M System training plan designed to meet the needs of the Fleet.

TYCOMs must ensure adequate 3-M Program training for all personnel within the command associated with maintenance, configuration and logistics support management. The TYCOMs are required to monitor and take corrective action to ensure ship compliance with 3-M policy and procedures, including a continuing quality review of 3-M data submitted by each ship.

Shipboard on-the-job training represents the cornerstone of Fleet operational readiness and provides the optimum method of acquiring hands-on training. On-the-job training will be relied upon to sustain that level of knowledge and awareness received during formal training. Training should be continuous as new methods, procedures or features are introduced.

1-2 3-M SYSTEM AND 3-M SYSTEM SUPPORT ASHORE TRAINING

The Center for Service Support (CSS) is the program manager for fleet-wide 3-M training. Feedback or requests for information should be sent to:

Commanding Officer
Center for Service Support (CSS)
ATTN: FIM Directorate
1425 Prince Avenue
Athens, GA 30677

cssfim@cnet.navy.mil
Commercial (706) 355-7501
DSN 354-7501

3-M System training is additionally provided in the curricula of Class A schools, United States Naval Academy (USNA), Officer Candidate School (OCS) and Naval Reserve Officer Training Candidate (NROTC) courses to introduce students to 3-M system concepts, operation applications and benefits.

Other training is available upon request. Information on courses available, course descriptions, quota controls and school locations can be obtained from the Catalog of Naval Training Courses (CANTRAC). The following are 3-M courses currently available and reflect the course number, course name, number and target audience:

NAVY TACTICAL COMMAND SUPPORT SYSTEM (NTCSS) II MANAGER
A-531-0021
To train personnel in common software services that provide interface between client/server application programs and the operational environment.

SNAP 3-M SYSTEMS COORDINATOR/INSPECTOR
J-500-0029
This course trains TYCOM-GROUP-SQUADRON personnel and Ships 3-M Coordinators in the responsibilities associated with verification, update and inspection of the ships 3-M Systems. Personnel applying for this training must be billeted to either a 3-M Coordinator or 3-M Inspector Billet.

UNIT LEVEL RSUPPLY
A-551-0026
Relational Supply Unit Technical Specialist

STOCK CONTROL SUPERVISOR/RSUPPLY FORCE LEVEL
A-551-0027
Provides leading Storekeepers assigned to RSupply (Force) equipped ships with the required knowledge and skills to perform duties.

RELATIONAL SUPPLY (UNIT) STOCK CONTROL SUPERVISOR
A-551-0028
To provide leading Storekeepers assigned to RSupply (Unit)-equipped ships with the required knowledge and skills to perform duties.

RSUPPLY (FORCE LEVEL) OPERATIONS TECHNICIAN
A-551-0029

To provide knowledge and skills training for Storekeepers assigned to or in transit to RSupply (Force Level) -equipped ships. Petty Officers will be assigned access within one or more functional systems and with specific responsibilities within a particular functional area. These individuals will be able to perform add/change/delete records, suspend transaction processing, queries, issues, requisition and receipt processing. Submit batch jobs for generation of management reports, and process Defense Finance and Accounting Service (DFAS) financial feedback reconciliations.

SNAP II LEADING STOREKEEPER AFLOAT
A-551-0093

The SNAP II Leading Storekeeper Afloat will be responsible for the performance of the automated procedure required by Leading Storekeepers Afloat on a Shipboard Non-Tactical Automated Data Processing Program II (SNAP II) ship in accordance with applicable documentation.

SNAP II SUPPLY FINANCIAL MANAGEMENT SUPERVISOR
A-551-0094

This course is designed to provide enlisted personnel ordered to leading storekeeper billets on SNAP II equipped ships with the knowledge and skills necessary to perform all duties required of the leading storekeeper in supervising the operation and management of the SNAP II SFM System.

SHIPBOARD UNIFORM AUTOMATED DATA PROCESSING SYSTEM-RT MANAGER
A-551-0096

The SUADPS-RT course is designed to provide senior enlisted E6-E9 Storekeepers and Officers CWO-04 with the knowledge and skills required to perform the duties of Logistics Primary Assistant, Stock Control, Material, Stores, Cargo and QA billets aboard SNAP I platforms (T-AFS, AS, CV, CVN, LHA, LHD, LPH).

1-3 OTHER 3-M SYSTEM TRAINING

1-3.1 Naval Sea Logistics Center (NAVSEALOGCEN)

Available from NAVSEALOGCEN is the Ships' 3-M On-line System Training Course. The course sponsored and conducted by NAVSEALOGCEN is a 2 day program designed to introduce and train individuals on the usage of OARS and the 3-M database. This course essentially encompasses two major areas, Introduction and

Overview of Ships' 3-M and Introduction to the OARS Retrieval Tool. It provides both instruction and hands-on lab time. Upon completion of this course, individuals should possess enough knowledge to enable them to retrieve data necessary for their specific functions.

Target audience includes military and civilian, equipment life cycle managers, system managers and engineers with a need to work with Ships' 3-M data. Requests for information and course dates should be addressed to:

Commanding Officer
Naval Sea Logistics Center
Attn: Code N60
5450 Carlisle Pike
P. O. Box 2060
Mechanicsburg, PA. 17055-0795

Commercial (717) 605-4734
DSN 430-4734

Navy Integrated Call Center
Commercial 1-877-418-6824
DSN 510-428-6824

1-4 SHIPBOARD TRAINING

The commanding officer establishes and maintains a viable 3-M system training program to sustain that level of knowledge and awareness received during formal training.

1-4.1 3-M System Team Assist Visits

Periodic assistance is provided upon request.

1-4.2 Training Sources/Aides Available

The following 3-M System training courses and aids are available to assist in shipboard training:

a. 3-M PQS (NAVEDTRA 43241F), and provides the 3-M knowledge and fundamentals required for workstations with both PMS and automated MDS requirements.

MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

APPENDIX A

DATA ELEMENT DESCRIPTIONS AND VALIDATION SPECIFICATIONS

APPENDIX A

DATA ELEMENT DESCRIPTIONS
AND VALIDATION SPECIFICATIONS
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APPENDIX A

DATA ELEMENT DESCRIPTIONS AND VALIDATION SPECIFICATIONS

A-1 PURPOSE

This appendix identifies the data elements used for 3-M documentation and reporting, and provides a complete listing of the data elements and their descriptions. This appendix also includes the data element specifications used for 3-M reporting. Only the core 3-M data elements have been included; however, the use of additional data elements may be allowed if they support specific TYCOM, Program Manager, or OPNAV requirements.

A-2 OBJECTIVE

The objective of this appendix is to ensure that 3-M data requirements are explicitly understood and followed. Divided into two sections, the validation specification portion can be used to:

a. Provide a means for organizational and intermediate level personnel to document information that is correct and complete.

b. Establish data element requirements for all 3-M ADP systems, including systems that interface with 3-M.

c. Provide a means for personnel conducting 3-M validations to ensure that 3-M data specifications are being followed.

d. Establish requirements for reporting 3-M maintenance data.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Action Taken	F968	2K	2	E	1. Mandatory 2. Must be left-justified. 3. For 4790/2K, first character must be 0, 1, 2, 3, 4, 7, 8, or 9. For action taken codes 1, 2, and 3, the second character codes A, B, C, M, or T can be used. For action taken code 7, the second character codes A, B, C, D, or E can be used. For action taken code 9, the second character codes A, B, C, D, E, F, G, H, I, or J can be used.
Action Taken	F968	CK	2	E	1. Mandatory. 2. Must be left-justified. 3. For 4790/CK, must be 1, 2, 3 with or without the second character A, B, C, M, or T.4. For Alteration CK, must be 5A, 5B, 5C, or 5D.
Active Maintenance Time	F943	2K/CK	3	N	1. Optional. 2. Mandatory for SEL reporting
Allowance Parts List/Allowance Equipage List (APL/AEL)	D008G	2K/CK	11	E	1. Mandatory. 2. Must not be blank, not all zeros, and no imbedded blanks. 3. Must be the APL/AEL Number, "NOTLISTED", or "NA".

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Alterations (Configuration Changes)	E319	2K/CK	14	E	1. Optional. 2. For SHIPALT, pos. 1 & 2 must be SA. Pos. 3-6 is ship type. Pos. 7-13 is alteration number. Pos. 14 is title code. 3. For all other alteration types, pos. 1 & 2 must be OA, BA, FC, MA, SI, EC, HI, TY, TD, SP, SC, TR, EP, MO, or AR. Pos. 3 is blank. Pos. 4-14 is alteration number.
Assist Repair Work Center	E902A	2K/2P	4	E	1. Optional.
Assist Repair Work Center Estimated Man-Hours (Asst. Est. MHRS)	E902A	2K/2P	4	E	1. Optional.
Automated Integrated Language System Identification Number (AILSIN)	E129	2K/CK	12	E	1. Optional.
Available on Board(Yes/No)	---	2K	1	A	1. Mandatory only if the "Blueprints, Technical Manuals, etc." data element is filled. 2. Must be an "X".
Blueprints, Technical Manuals, etc.	---	2K	32	E	1. Optional.
Cause	F964C	2K	1	N	1. Mandatory. 2. Must be 1, 2, 3, 4, 5, 6, 7, or 0.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Completion Date	---	2K/CK	*	N	1. Mandatory. 2. Must be greater than deferral date.* Length is determined by the date format.
Component Action	F968C	CK	1	A	1. Mandatory. 2. If reporting a configuration maintenance action, must be R, I, or M. 3. If reporting a configuration file correction, must be A, D, or C.
Component Identification	F940B	CK	15	E	1. Optional.
Component Noun Name	---	CK	26	E	1. Mandatory. 2. For HM&E equipment, enter the noun name. 3. For electronics equipment, enter the AN type designator or commercial model number. 4. For ordnance equipment, enter the system/equipment nomenclature, followed by the Mark and Mod numbers.
Component Serial Number	---	CK	15	E	1. Mandatory. 2. For equipment without a serial number, enter "NONE".
CSMP Summary	F905D	2K	30	E	1. Mandatory
Date Completed	---	2K	*	N	*. Length is determined by the date format
Date of Estimate	---	2K	*	N	*. Length is determined by the date format
Deadline Date	F964F	2K	*	N	1. Optional. 2. Length is determined by the date format.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Deferral Date	F964E	2K	*	N	1. Mandatory. 2. Length is determined by the date format.
Deferral Reason	F964D	2K	1	N	1. Mandatory. 2. Must be 1, 2, 3, 4, 5, 6, 7, 8, 9, or 0.
Departure Test Required	---	2P	1	A	1. Optional. 2. If used, must be an "X".
Dry Dock Required	---	2P	1	A	1. Optional. 2. If used, must be an "X".
Engineering Operational Sequencing System (EOSS)	---	CK	15	E	1. Optional. 2. Not required for Electronics or Ordnance configuration change actions.
Equipment Identification Code	D008D	2K/CK	7	E	1. Mandatory.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Equipment Noun Name	F940	2K/CK	16	E	1. Mandatory. 2. If the maintenance action is a SHIPALT, enter the equipment noun name from the SHIPALT record. Otherwise, enter the equipment nomenclature/description of the equipment or system on which the maintenance was performed. 3. For HM&E equipment, enter the noun name. 4. For electronics equipment, enter the AN type designator or commercial model number. 5. For ordnance equipment, enter the system/equipment nomenclature, followed by the Mark and Mod numbers.
Estimated Man-Days	---	2K/2P	5	N	1. If the estimate is less than one, enter "1".
Estimated Man-Days Cost	---	2K/2P	7	N	1. If no estimate, enter "0".
Estimated Man-Hours	G902A	2K/2P	4	N	1. If no estimate, enter "0".
Estimated Material Costs	G902M	2K/2P	6	N	1. If no estimate, enter "0".
Estimated Total Cost	---	2K/2P	7	N	1. If no estimate, enter "0".

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Final Action (IMA only)	---	2K	2	E	1. Mandatory. 2. Must be left-justified. 3. First character must be 0, 1, 2, 3, 4, or 7. For action taken codes 1, 2, and 3, the second character codes A, B, C, M, or T can be used. For action taken code 7, the second character codes A, B, C, D, or E can be used. 4. For alteration reporting, must be 5A, 5B, 5C, or 5D. 5. For rejected work request, must be 6A-6I.
First Contact	F804	2K	18	E	1. Mandatory.
Hull Number	---	2K/CK/2P	11	E	1. Optional.
Identification/ Equipment Serial Number	---	2K	15	E	1. Mandatory.
INSURV Number	D912	2K	7	E	1. Optional.
Integrated Priority	F802	2K	5	N	1. Optional.
IUC Screening	F949	2K	2	E	1. Optional. 2. If used, must be 1, 2, 3 with or without the second character A, S, or M; 4; 5, 5A-5F; 6, 6A-6E; or 8.
IUC/Repair Activity/TYCOM Remarks	---	2P	180	E	1. Optional.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Job Control Number (JCN)	E349	2K/CK/2P	13	E	1. Mandatory. 2. This data element is made up of the UIC (A002), Work Center (E128), and JSN (E349C).
Job Description/ Remarks	---	CK	120	E	1. Mandatory.
Job Order Number	G679	2K	10	E	
Job Sequence Number (JSN)	E349C	2K/CK/2P	4	N	1. Mandatory.
Key Event	F934	2P	4	E	1. Optional.
Key Operation	F939	2P	2	N	1. Optional.
Lead Planning &Estimating Code	---	2K	4	E	1. Optional.
Lead Repair Work Center (LWC)	E902D	2K/2P	4	E	1. Mandatory.
Location	E900A	2K/CK	20	E	1. Mandatory.
Maintenance Index Page Number (MIP)	E130	CK	15	E	1. Optional.
Man-Hours Expended	---	2K	4	N	1. Mandatory. 2. Cannot be blank.
Meter Reading	---	2K	5	N	1. Optional.
Meter Reading Indicator	D916G	CK	1	A	1. Optional. 2. If used, must be "X".
Nameplate Data	F940C	CK	120	E	1. Mandatory for installation, and addition. 2. Optional for removal, modification, change, and deletion.
Next Higher Assembly	F940D	CK	21	E	1. Optional.
Normally Done By	---	2P	1	A	1. Optional.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Periodic Maintenance Requirement	---	2P	12	E	1. Optional.
Periodicity	---	2P	3	E	1. Optional.
Post-Overhaul Test Required	---	2P	1	A	1. Optional. 2. If used, must be an "X".
Pre Arrival/Arrival Conference Action/Remarks	---	2K	56	E	1. Optional.
Pre-Overhaul Test Required	---	2P	1	A	1. Optional. 2. If used, must be an "X".
Priority	C904A	2K	1	N	1. Mandatory. 2. Must be 1, 2, 3, or 4.
Quality Assurance Requirements	---	2P	12	A	1. Optional.
Quantity	---	CK	3	N	1. Mandatory.
R/M (Maintenance Indicator)	D912E	2K	1	A	1. Optional. 2. If used, must be "M" or "R".
Rate	F804A	2K	4	E	Mandatory.
Record Identification Number (RIN)	E221	CK	5	E	1. Mandatory for deletion, removal, and modification. 2. Optional for installation and addition.
Remarks/ Description	F905	2K/CK	1200	E	1. Mandatory.
Repair Activity UIC	A002P	2K	5	E	1. Optional.
Repair Work Center	E902A	2K	4	E	1. Optional.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
S (Safety Identifier)	D912B	2K	1	A	1. Optional. 2. If used, must be "S".
Safety Hazard	C921A	2K	1	E	1. Optional. 2. Must be 1, 2, 3, 4, 5, 0. Code 6 thru 9 may be locally assigned by TYCOMs for additional safety codes required.
Scheduled Completion Date	---	2K/2P	*	N	1. Optional. *. Length is determined by the date format.
Scheduled Start Date	---	2K/2P	*	N	1. Optional. *. Length is determined by the date format.
Second Contact/ Supervisor	F804B	2K	18	E	1. Optional.
Service Application Code	E010A	CK	10	E	1. Optional.
Ship's Force Man-Hours (S/F MHRS)	F808B	2K	4	N	1. Mandatory.
Ship's Force Man-Hours Expended (S/F MHRS EXP)	F808	2K/CK	4	N	1. Mandatory.
Ship's Force Man-Hours Remaining (S/F MHRS REM)	F808A		4	N(*)	1. Optional. *. If TYCOM allows an automatic close out of the deferral by the IMA, enter "AUTO".
Special Interest	---	2P	1	A	1. Optional. 2. If used, must be an "X".
Special Purpose A	F801	2K	2	E	1. Optional. 2. If used, enter the Key Event code.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Special Purpose B	F801	2K	2	A	1. Optional. 2. If used, must be SS.
Special Purpose C	F801	2K	2	E	1. Optional. 2. If used, must be L1.
Special Purpose D	F801	2K	2	N	1. Optional. 2. If used, must be 08.
Special Purpose E	F801	2K	2	A	1. Optional. 2. If used, must be RC
Special Purpose F	F801	2K	2	A	1. Optional. 2. If used, must be DD.
Special Purpose G	F801	2K	2	A	1. Optional. 2. If used, must be NC or NP.
Special Purpose H	F801	2K	2	E	1. Reserved for future use.
Special Purpose I	F801	2K	2	E	1. Reserved for future use.
Special Purpose J	F801	2K	2	E	1. Reserved for future use.
Special Purpose K	F801	2K	2	E	1. Reserved for future use.
Special Purpose L	F801	2K	2	E	1. Optional. 2. If used, enter the code assigned to the visiting activity.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
Special Requirements	---	2P	*	E	1. Optional. 2. If used, refer to Key Event, Special Interest, Dry Dock Required, Pre-Overhaul Test Required, Post-Overhaul Test Required, or Departure Test Required Codes for allowable codes and values. *. Length is determined by the codes entered.
Status	F964B	2K	1	N	1. Mandatory. 2. Must be 1, 2, 3, or 0.
Suffix	D912D	2K	2	E	1. Optional.
Task	---	2P	12	E	1. Optional.
Technical Documentation	---	2P	28	E	1. Optional.
Technical Manual Number	---	CK	32	E	1. Optional.
Trouble Isolation	F980	2K	1	N	1. Optional.
TYCOM Screening	F949A	2K	2	E	1. Optional. 2. If used, must be 1, 2, 3, with or without the second character A, S, or M; 4; 5A-5F; 6, 6A-6E; 8; or 9.
Type Availability	F927	2K	1	N	1. Mandatory. 2. Must be 1, 2, 3, 4, or 0.
U (Mission Degrading)	D912C	2K	1	A	1. Optional. 2. If used, must be "U".
Unit Identification Code (UIC)	A002	2K/CK/2P	5	E	1. Mandatory. 2. No imbedded blanks.

DATA ELEMENT	DEN	MAINTENANCE TYPE	LENGTH	ENTRY TYPE	VALIDATION SPECIFICATIONS
When Discovered Code	F964	2K	1	N	1. Mandatory. 2. Must be 1, 2, 3, 4, 5, 6, 7, 8, 9 or 0.
When Discovered Date	F964A	2K	*	N	Mandatory. *. Length is determined by the date format.
Work Center	E128	2K/CK/2P	4	E	Mandatory for installation or addition. Optional for removal, modification, deletion, or change.
Work Center Responsible for Equipment (WCRE)	E128	CK	4	E	1. Mandatory for installation or addition. 2. Optional for removal, modification, deletion, or change.
Work Request Routine	---	2K	5	E	1. Optional. 2. If used, must be either the Expanded Ship Work Breakdown Structure, Ship Work Breakdown Structure, Ship Work Authorization Boundary, or Ship Work Line Item Number as directed by the TYCOM.
YYMM Issued	---	2P	4	N	1. Optional.

DATA ELEMENT DESCRIPTIONS

Following the validation specification section is an alphabetical listing of the authorized 3-M data elements. This listing provides a short definition of each data element along with allowable codes and values where applicable.

DATA ELEMENTS

ACCEPTED BY (entered on 2K)

The signature/name and rank/rate of the person authorized by the tended ship to verify the acceptability of work performed. This entry is mandatory when reporting completion of a previously deferred maintenance action. The work center supervisor must approve all maintenance actions not requiring assistance from an outside work center; the work center supervisor's approval will be recorded when the maintenance action is documented.

ACTION TAKEN (ACT. TKN.) (entered on 2K and CK)

A code to describe the maintenance action taken. Select the code which best describes the action taken to complete the maintenance. When recording these codes, start in the left-justified position of the field. The first character is to be chosen from the list below; the second character is free-form and is to be recorded as specified by the TYCOM.

MAINTENANCE ACTION: For maintenance action reporting, the following action codes can be used:

Code	Description
1	Maintenance Action Completed; Parts Drawn from Supply
2	Maintenance Action Completed; Required Parts Not Drawn from Supply (local manufacture, pre-expended bins, etc.)
3	Maintenance Action Completed; No Parts Required

NOTE:

The following second character codes can be used with the above Action Taken codes 1, 2, or 3 as directed by the TYCOM:

A	Maintenance Requirement Could Have Been Deferred
B	Maintenance Requirement Was Necessary
C	Maintenance Requirement Should Have Been Done Sooner
M	High Cost Repairs

T The Equipment Being Reported Had a Time Meter

Code	Description
4	Canceled (When this code is used, the deferral will be removed from the CSMP. This code is not to be used with INSURV, safety, or priority 1 or 2 deferrals screened for accomplishment by the TYCOM or IUC.)
7	Maintenance Action Completed; 2-M (Miniature/Microminiature Electronic Modules) Capability Utilized.

NOTE:

The following second character codes can be used with Action Taken Code 7 to better describe the action taken:

A Parts Drawn from Supply Utilized
B Parts Not Drawn from Supply Utilized
C Automatic Test Equipment (ATE) Utilized
D ATE and Parts Drawn from Supply Utilized
E ATE and Parts Not Drawn from Supply Utilized

Code	Description
8	Periodic Time Meter/Cycle Counter reporting. (This code is not applicable to the "FINAL ACTION" code reported by the repair activity.)
9	Maintenance Action Completed; 3M Fiber Optic Repair

NOTE:

The following second character codes can be used with Action Taken Code 9 to better describe the action taken:

A FOTE, multimode ST MQJs utilized
B FOTE, multimode heavy duty MQJs utilized
C FOTE, multimode rotary mechanical splice MQJs utilized
D FOTE, single mode ST MQJs utilized
E FOTE, single mode heavy duty MQJs utilized
F FOTE, multimode specialty MQJs utilized
G FOTE, single mode specialty MQJs utilized
H FOTE, not available

I	Standard MQJs not available
J	Specialty MQJs not available

Code	Description
0	None of the Above

CONFIGURATION CHANGE: For configuration change reporting, the following action codes can be used:

Code	Description
1	Maintenance Action Completed; Parts Drawn from Supply
2	Maintenance Action Completed; Required Parts Not Drawn from Supply (local manufacture, pre-expended bins, etc.)
3	Maintenance Action Completed; No Parts Required

NOTE:

The following second character codes can be used with the above Action Taken codes 1, 2, or 3 as directed by the TYCOM:

A	Maintenance Requirement Could Have Been Deferred
B	Maintenance Requirement Was Necessary
C	Maintenance Requirement Should Have Been Done Sooner
M	High Cost Repairs
T	The Equipment Being Reported Had a Time Meter
5A	Partially Completed Alteration
5B	Fully Completed Alteration
5C	Fully Completed Equivalent to Alteration
5D	Alteration Directive Not Applicable

NOTE:

If there is an entry in the Alterations field of a deferred maintenance action (2K), a code "5", including the applicable suffix ("A-D"), must be entered in the "FINAL ACTION" field.

ACTIVE MAINTENANCE TIME (entered on 2K and CK)

The total clock hours, to the nearest whole hour, during which ship's force maintenance was performed. This should show actual time for troubleshooting, but not include delays.

AILSIN (see data element "AUTOMATED INTEGRATED LANGUAGE SYSTEM IDENTIFICATION NUMBER (AILSIN))"

ALLOWANCE PARTS LIST/ALLOWANCE EQUIPAGE LIST (APL/AEL) (entered on 2K and CK)

The APL/AEL relates to a set of characteristics which identify a particular system, equipment, or component. The Master Index of APLs/AELs (MIAPL) lists what APLs/AELs are available and cross references various equipment identification numbers to an existing APL/AEL (e.g., "992179236" for an APL, and "2-260034096" for an AEL).

For manual reporting, on equipment not listed in the Coordinated Shipboard Allowance List (COSAL), enter "NOT LISTED" in the APL/AEL field. For maintenance actions that are not equipment related (e.g., requests for cruise box manufacture, printing services, etc.), enter "NA" in this field.

ALTERATION IDENTIFICATION (CONFIGURATION CHANGES) (entered on 2K and CK)

An alteration is a change in design, material, number, location, or relationship of an assembly's component parts. Some alteration categories are:

SHIPALT. Enter the alteration identification exactly as it appears on the Ship Alteration (SHIPALT) Record (i.e., SA, ship type, and SHIPALT number). The alteration prefix code "SA" is entered in the first two positions, followed by the ship type, with the alteration number beginning in the 7th position. Enter the title code shown in the authorizing directive in the right-justified position of the field.

ORDALT. Enter and left-justify the alteration identification code "OA". Leave position 3 blank; follow with the alteration number in position 4. Record the ORDALT number from the upper right-hand corner of the authorizing directive.

FIELD CHANGE. Enter "FC" in the two left-justified positions. Leave position 3 blank; place the numeric characters listed in the FC Bulletin in positions 4 and 5.

ALTERATION REQUEST. May be originated by a ship to request an alteration design. Enter and left-justify "AR", then a blank space, then any number the ship assigns for its own control.

OTHER ALTERATIONS. Enter the appropriate alteration prefix from the following list in the two left-justified positions, leave position three blank, and identify the alteration directive in the remaining positions:

BA = BOAT ALTERATION
MA = MACHINERY ALTERATION
SI = SYSCOM COMMAND INSTRUCTION
EC = ENGINEERING CHANGE
HI = HABITABILITY
TY = TYCOM DIRECTION
TD = TECHNICAL DIRECTIVE
SP = STRATEGIC SYSTEMS PROJECT OFFICE ALTERATION
SC = SERVICE CHANGE
TR = TRIDENT ALTERATION
EP = ENGINEERING CHANGE PROPOSAL
MO = CRYPTO EQUIPMENT MODIFICATION

ASSIST REPAIR WORK CENTER (ASST. REPAIR W/C) (entered on 2K and 2P)

The 3- or 4-character code of the first work center assigned to assist the lead work center on the job being planned. The code is always left justified in the field. On the 2K, if more than one assist work center is required, fill in another 2K. Only two assist work centers (two supplemental 2K continuation sheets) can be accommodated when a 2K is used as a planning document by an IMA.

ASSIST REPAIR WORK CENTER ESTIMATED MAN-HOURS (ASST EST MHRS) (entered on 2K)

The total number of estimated man-hours required by the assist work center of the repair activity to complete its portion of the job.

AUTOMATED INTEGRATED LANGUAGE SYSTEM IDENTIFICATION NUMBER (AILSIN) (entered on CK)

The number used to identify the functional/hierarchical relationship of the ship, system, and equipment configuration records. Current numbering schemes are AILSIN, Configuration Identification Number (CIN) and Functional Group Code (FGC).

BLUEPRINTS, TECHNICAL MANUALS, ETC. (entered on 2K)

Used to list technical material (blueprints, technical manuals, plans, etc.), that might be of assistance to the repair activity providing assistance.

CAUSE (CAS) (entered on 2K)

The code best describing the cause of the failure or malfunction when need for maintenance was first discovered. When more than one cause contributed to the failure or malfunction, select the primary or overriding one (this field provides valuable data to the equipment manager; without it, only the fact that the equipment failed is known). Maintenance personnel must use their best judgment in determining the cause of failure.

Code	Descriptions
1	ABNORMAL ENVIRONMENT. Exposure to conditions more extreme than those reasonably expected in the normal shipboard environment (e.g., electrical equipment sprayed by salt water, or compartment flooded).
2	MANUFACTURER/INSTALLATION DEFECTS. Material not assembled or manufactured per specifications, or installed improperly by IMA or Depot (e.g., motor with open circuit armature).
3	LACK OF KNOWLEDGE OR SKILL. Failure or malfunction of the equipment due to insufficient training, experience, or physical coordination of the operator, maintainer, or other personnel (e.g., not knowing equipment limitations such as the danger of a low speed wheel on a high speed grinder).
4	COMMUNICATIONS PROBLEM. A breakdown in the passing, receiving, or understanding of information (e.g., failure to hear or receive a complete message due to noise or mechanical or electrical interference).
5	INADEQUATE INSTRUCTION/PROCEDURE. The instruction or procedures guide has omissions, errors, ambiguities, or other deficiencies (e.g., technical manual omits lubricant type).
6	INADEQUATE DESIGN. Material manufactured and installed per specifications failed prematurely during normal usage under normal environmental conditions (e.g., steam piping orientation precludes adequate draining during warm-up).
7	NORMAL WEAR AND TEAR. Material requires replacement after long service and/or as a result of PMS (e.g., pump wear rings replaced during PMS).
8	CORROSION CONDITION.
0	OTHER OR NO MALFUNCTION. Needs to be explained in the "Remarks" field. Examples: 1) Fatigue or physical stress brought on by prolonged work periods or excessive heat, humidity, or noise. 2) Desire to save time and effort by taking shortcut and jury-rigging equipment. 3) Malfunction occurred when installing a field change to improve

Code Descriptions

equipment effectiveness, or when the cause resulted from a personnel oriented deficiency affecting safety due to fatigue, etc.

COMMANDING OFFICER'S SIGNATURE (entered on 2K)

Shows approval by the commanding officer or authorized representative. Required on all deferrals for outside assistance.

COMPLETED BY (entered on 2K)

The signature and rate of the senior person actively engaged in the job at the lead work center. The senior person on the job will be identified for all maintenance actions not requiring assistance from an outside work center.

COMPLETED DEFERRAL (COMP DEFL) (entered on CK)

Indicates the completion of a previously deferred job.

COMPLETED MAINTENANCE ACTION, NO DEFERRAL (COMP M/A NO DEFL) (entered on CK)

Indicates a completed maintenance action with no prior deferral.

COMPLETION DATE (entered on 2K and CK)

The Julian date the maintenance action was completed.

COMPONENT ACTION (CA) (entered on CK)

Indicates if the identified component was removed (R), installed (I), or modified (M). Use the codes R, I, or M as appropriate. If reporting a configuration record change, use the code "A" for addition, "D" for deletion, and "C" for correction.

COMPONENT APL/AEL (entered on CK)

The APL/AEL of the component or equipment identified. If unsure of the correct APL/AEL for the equipment, entry may be left blank, and assistance requested by the supply department.

COMPONENT IDENTIFICATION (entered on CK)

The local numbering system used to identify equipment, (e.g., Station Number: "1A BOILER" or Valve Mark: "ASW 25"). A description of the component may be entered.

For electronic and combat systems equipment, the entry is optional if the component serial number field has an entry.

COMPONENT NOUN NAME (entered on CK)

Identifies the component. If the action being reported is the accomplishment of an equipment alteration (Field Change, Engineering Change, etc.), the component is defined as the equipment level addressed in the alteration directive, usually the major equipment or system level; otherwise, the component is defined as the lowest unit, type designator, or assembly that has its own configuration identity. This component may or may not have its own APL. Example of an equipment and related components:

System or Equipment:	AN/WRT-2
Component:	PP-2222/WRT-2
Component:	C-2764/WRT-2

If several components are removed and installed in a single maintenance action (identified by one JCN), continuation pages may be used to report the component changes. If necessary, overflow data from the component noun name can be placed in the nameplate data field.

COMPONENT SERIAL NUMBER/IDENTIFICATION/EQUIPMENT SERIAL NUMBER (entered on CK)

Serial number of the component. If a serial number is entered, the QUANTITY field must be one ("1"). For equipment without a serial number, enter "NONE".

CONFIGURATION FILE CORRECTION (CONF FILE CORR) (entered on CK)

A data element field that indicates that the report is being submitted to correct erroneous configuration records (no equipment maintenance action involved).

CONTINUATION FOR (entered on 2L)

Identifies the maintenance action to which the supplemental information pertains.

CONTINUATION SHEET (entered on 2K)

Indicates remarks are continued on a second, third, or fourth form (2K). For manual reporting enter an "X".

CSMP SUMMARY (entered on 2K)

A condensed description of the problem. This entry is limited to 30 characters. The CSMP summary conveys to management the significance of the JCN (maintenance action). The CSMP summary is displayed on management reports, as opposed to the entire

narrative of the "REMARKS" field which is not. If continuation sheets are used, the summary line will appear on the first page.

DATE (entered on 2L)

The Julian date the document is prepared.

DATE COMPLETED (entered on 2K)

The Julian date the work request is completed and signed off by the requesting ship.

DATE OF ESTIMATE (entered on 2K)

The Julian date the assisting activity completed the planning of the maintenance action.

DEADLINE DATE (entered on 2K)

The latest possible Julian date that outside assistance and ship's force work must be completed as determined by the originator. This entry may be used to indicate a completion date required to meet an operational commitment, or to allow another job to start. This is an optional entry.

DEFERRAL DATE (DEFER. DATE) (entered on 2K)

The Julian date of when the maintenance action was deferred. An example of a deferral action on 22 April 1994 would be: "4112".

DEFERRAL REASON (DFR) (entered on 2K)

A code which best describes the reason maintenance could not be performed at the time of deferral. Acceptable codes are:

Code	Deferral Reason
1	DUE TO SHIP'S FORCE WORK BACKLOG/OPERATIONAL PRIORITY. Within capability of ship's force to accomplish, but unable to do so because of ship's overall workload or operations.
2	LACK OF MATERIAL. Within capability of ship's force, but unable to accomplish due to lack of parts, tools, test equipment, etc., that are specified for use in repair work by the technical manual or drawing. NOTE: List the unavailable parts, tools, or test equipment and the technical manual and/or equipment drawing in Remarks.
3	NO FORMAL TRAINING ON THIS EQUIPMENT. Should be within capability of ship's force, but personnel responsible have no formal training in the maintenance of the equipment.
4	FORMAL TRAINING INADEQUATE FOR THIS EQUIPMENT. Should be

Code	Deferral Reason
	within capability of ship's force, and personnel responsible have received formal training, but the training is considered inadequate.
5	INADEQUATE SCHOOL PRACTICAL TRAINING. Should be within capability of ship's force, and personnel responsible have received formal training, but practical maintenance aspects of training are considered inadequate.
6	LACK OF FACILITIES/CAPABILITIES. The ship is not allowed shop equipment or other facilities to accomplish; work is otherwise beyond expected capability of ship's force to accomplish.
7	NOT AUTHORIZED FOR SHIP'S FORCE ACCOMPLISHMENT. Directives of higher authority specify that the job will be done by other than ship's force.
8	FOR SHIP'S FORCE OVERHAUL OR AVAILABILITY WORK LIST. For jobs to be done by ship's force during forthcoming overhaul or availability.
9	LACK OF TECHNICAL DOCUMENTATION. Should be within capability of ship to accomplish but unable to do so because technical manuals, blueprints, drawings, etc., are not available.
0	OTHER - OR NOT APPLICABLE. Explain in Remarks.

DEPARTMENT INITIALS (entered on 2K)

The initials of the department head indicating the document was screened.

DIVISION INITIALS (entered on 2K)

The initials of the division officer indicating the document was screened.

ENGINEERING OPERATIONAL SEQUENCING SYSTEM (EOSS) (entered on CK)

The Document Code and Control Number of the primary EOSS procedure that is affected by the configuration change.

EQUIPMENT IDENTIFICATION CODE (EIC) (entered on 2K and CK)

A 7-character code that identifies the equipment. The first position identifies the system; the first and second characters together identify the subsystem; the third and fourth together identify the equipment category in that system. The remaining three digits provide greater definition of the applicable equipment part and are useful to the engineer. Where the EIC is known to more than four digits, it should be recorded at that

level. EICs are listed in the SCLSIS Index Report or Ships' 3-M Reference CD.

If an equipment is not listed in the SCLSIS Index Report or the Ships' 3-M Reference CD, but it can be identified to the subsystem, use the subsystem identification, followed by two zeros. Example: An equipment identified as TRANSCEIVERS-COMMUNICATIONS, but not in the SCLSIS Index Report or the Ships' 3-M Reference CD, would be reported as "QD". If the equipment is identified only to the system, use the system identification, followed by three zeros.

EQUIPMENT NOUN NAME (entered on 2K and CK)

The nomenclature/description of the equipment. This is the same nomenclature assigned to the equipment EIC. Standard abbreviations may be used. When recording the accomplishment of a SHIPALT, use the noun name from the record. If the maintenance action affects several components or systems, enter the name/designator of the highest assembly affected.

For HM&E, use the noun name (e.g., "MOTOR GENERATOR").

For electronics equipment, use the Army/Navy (AN) designation, or commercial model number (e.g., "AN/SPS-40D", "CY-4727/SPA-25", and "403-B").

For combat systems equipment, enter the nomenclature followed by the Mark (MK) and Modification (MOD), separated by "/" (e.g., "LAUNCH SYSTEM 36/1").

ESTIMATED MAN-DAYS (entered on 2K and 2P)

Used by the repair activity, the total man-day estimate for all involved work centers to complete the job (if estimate is less than 1, enter "1").

ESTIMATED MAN-DAYS COST (entered on 2K and 2P)

Used by the repair activity, the total man-day cost estimate for all involved work centers to complete the job (Estimated Man-Day entry x man-hour rate x 8 (working hours per day)).

ESTIMATED MAN-HOURS (EST. MHRS.) (entered on 2K and 2P)

The man-hours estimated by the lead work center of the repair activity to complete the job.

ESTIMATED MATERIAL COSTS (entered on 2K and 2P)

Used by the repair activity, the total material costs estimated to complete the job.

ESTIMATED TOTAL COST (entered on 2K and 2P)

Used by the repair activity, the total cost estimated to complete the job (Estimated Man-Day Cost + Estimated Material Costs = Estimated Total Cost).

FINAL ACTION (entered on 2K)

A code that describes the final action taken by the repair activity to complete the job. Refer to the data element "ACTION TAKEN" used for maintenance action reporting for a complete list of codes. Action Taken code "8" is not applicable. In addition, the following codes can be used:

Code	Descriptions
5A	Partially Completed Alteration
5B	Fully Completed Alteration
5C	Fully Completed Equivalent to Alteration
5D	Alteration Directive Not Applicable
6	Rejected Work Request (add suffix below for reason)
	A Ship's Force/Standard Stock Item
	B Excessive Shop Workload/Insufficient Availability
	C Lack of Skills
	D Lack of Facilities
	E Lack of Test or Calibration Equipment
	F Lack of Parts/Material
	G Lack of Documentation
	H Lack of Funds
	I Other (record the explanation in "Remarks")

FIRST CONTACT/MAINTENANCE (MAN) (entered on 2K and 2L)

The name of the senior person engaged in the maintenance action.

HULL NUMBER (entered on 2K, CK, 2P and 2L)

The ship type and hull number of the activity originating the maintenance action. Not required by activities other than ships.

IDENTIFICATION/EQUIPMENT SERIAL NUMBER (entered on 2K)

The identification or serial number (up to 12 characters) of the equipment or system on which maintenance is being deferred.

a. For electronics and combat systems equipment, use the Serial number from the equipment nameplate (e.g., for AN/SPS-10C Radar with serial number 48, use "48").

b. For HM&E, enter the ship's numbering system (e.g., for number 1A boiler, use "1A").

c. Where no specific identification or equipment serial number is given, or for photographic services, plaques, printing, cruise boxes, etc., enter "NA" (Not Applicable).

d. On items such as phones and fans, etc., list more than one item of the same type on a maintenance action; enter "VARIOUS".

e. If the serial number exceeds 12 characters, enter the words "SERIAL NUMBER" in the narrative, followed by the applicable number.

IMA REPAIR WORK CENTER

The lead work center at the IMA involved in the accomplishment of the maintenance. A 3- or 4-character code is used to uniquely identify the lead work center. Following is a list of the authorized IMA work center codes:

Repair W/C Code	Name	Abbreviated Name	Supply ID Code
01A	MDCO	MDCO	6D
01B	ARRS	ARRS	6D
01E	SRA OIC	SRA OIC	Z0
02A	Crane Services	Crane Services	2S
03A	OSH Office	OSH Office	3H
03T	Tender Repair Team	Tender Repair Team	
06A	Tool Room	Tool Room	6A
06B	Portable Tools	Portable Tools	6B
06M	Preventive Maintenance Group	Preventive Maint	6H
06N	Nuclear Temp Services	Nuclear Temp Serv	2T
08A	Floating Dry Dock	Floating Dry Dock	DA
10A	Repair Office/ARRS/MCO	Repair Office	6D
10B	Weapons Repair Office	Weapon Rep Office	AR
10C	Non-Nuclear Planning	Non-Nuclear Planning	6E
10D	Nuclear Planning	Nuclear Planning	6F

Repair W/C Code	Name	Abbreviated Name	Supply ID Code
10E	Technical Library	Technical Library	6G
10J	RO Non-IMA GT30	RO Non-IMA GT30	6D
10K	WR Non-IMA GT30	WR Non-IMA GT30	AR
10L	ROVSS	ROVSS	6D
10N	Nuclear Tech Library	AW	
10S	Submarine Monitoring Maintenance and Support (SMMS) Performance Monitoring Team (PMT)	SMMS (NAVSEA)	6J
11A	Shipfitter	Shipfitter	7A
17A	Sheetmetal	Sheetmetal	7B
25A	Gas Manufacturing	Gas Manufacturing	5A
25C	CO2 Recharge and Repair	CO2 Recharge/Repr	5C
25D	General Engineering Service	General Engnrg Svc	5D
26A	Welding Shop	Welding	7E
26B	Nuclear Welding	Nuclear Welding	7F
30A	Contracted Planning & Estimating	P&E	3D
31A	Inside Machine	Inside Machine	2A
31B	Engraving	Engraving	2B
31C	Governor Injector	Governor Injector	2C
31D	Valve Repair and Test Valve	2D	
31E	Internal Combustion Engine Repair	Intrnl Cmbstn Eng	2E
31F	Hydraulics Repair	Hydraulics	2F
31G	Pump Repair	Pump	2R
31H	ACFT L & R	ACFT L & R	AX
31M	Machinery R & R	Machinery R & R	AY
31T	Gas Turbine	Gas Turbine	2Q
31Z	Metal Build-up	Metal Build-up	2H
35A	Optical Repair and Overhaul	Optical	5E
35D	Watch and Clock Shop	Watch & Clock	5H
35E	Typewriter Shop	Typewriter	5J
37A	Print Shop	Print	31
38A	Outside Machine Shop	Outside Machine	2G
38B	Ordnance Repair, Test, and Align	Ordnance	5K
38C	P-250 Pump Shop	P-250 Pump Shop	1G
38D	Valve Barge	Valve Barge	1H
38N	Nuclear Repair	Nuclear Repair	2J

Repair W/C Code	Name	Abbreviated Name	Supply ID Code
39A	Photographic Shop	Photographic	32
41A	Boiler Inspection and Repair	Boiler	2K
41B	Boiler-Outside Repair	Boiler-Outside Rpr	2L
51A	Electrical Repair	Electrical Repair	33
51B	Outside Electrical	Outside Electrical	34
51C	Meter Calibration	Meter Calibration	35
51E	Battery Shop	Battery	36
51F	Gyro Inspection and Repair	Gyro	37
51G	Interior Communication Test and Repair	IC Interior Commun	38
51H	Cable Shop	Cable	39
51N	Nuclear Instruments	Nuclear Instruments	AU
56A	Pipe Shop	Pipe	7H
56B	Refrigeration and Air Conditioning Repair and Test	Refrig & Air Cond	2M
56C	Flexible Hose Test and Repair	Flexible Hose	7J
56N	Nuclear Piping	Nuclear Piping	7X
57A	Lagging and Pipe Covering Inspection and Repair	Lagging/Pipe Cover	7K
57B	Rubber and Plastic Forming Shop	Rubber and Plastic	7L
64A	Woodworking and Pattern Making Shop	Woodworking & Pattern	7M
64D	Drafting Shop	Drafting	7Q
64E	Key and Lock Shop	Key and Lock	5M
67A	Electronics Test, Repair, and Alignment	Electronics	41
67B	Electronics Calibration Lab	Electronic Cal Lab	42
67C	Crypto Repair and Test	Crypto Repair	43
67D	Teletype Repair	Teletype Repair	44
67E	Fire Control Test and Repair	Fire Control	AD
67F	Radiac Calibration and Repair	Radiac Calibration	5N
67G	Sonar Test, Repair, and Alignment	Sonar	5P
67H	Antenna Test, Repair, and Install	Antenna	45
67I	MSRA	MSRA	Z0

Repair W/C Code	Name	Abbreviated Name	Supply ID Code
67J	Digi Inert Nav Aid Test and Repair	Digi Inert Nav Aid	AQ
67K	Weapons Test Equipment, Repair and Calibrate	Weapons Test Equip	AP
67L	ADP/PC Repair	ADP/PC Repair	46
67M	PCB Repair	PCB Repair	47
67W	SLQ Repair	SLQ Repair	48
68A	Boat Repair	Boat Repair	7R
68B	Small Craft Support	Small Craft	7W
68C	Life Boat Repair (Inflatable)	Life Boat Repair	9N
71A	Paint and Sandblast	Paint and Sandblst	66
71B	Corrosion Control	Corrosion Control	7Y
71T	Tile & Plate Setter	Tile & Plate Setter	6M
72A	Riggers Support Activity	Riggers	7S
72B	Divers Support Activity	Divers	7T
72C	General Deck Service	General Deck Service	7U
72D	Weight Testing	Weight Testing	5Q
72E	Transportation	Transportation	6L
74A	Sail Loft and Canvas Shop	Sail Loft & Canvas	5R
81A	Foundry Operations	Foundry	2P
82A	Missile and Guidance Storage and Checkout	Missile/Guidnc Chk	AB
83A	Weapons Handling Inspection and Repair	Wpn Hndlg Insp & Rep	AJ
83B	Weapons Handling	Weapons Handling	AT
84A	Module Test and Repair Shop	Module Test & Repair	AC
84B	Ballistic FC Repair and Calibration	FC Ballistic Repr	AK
85A	Re-entry Body Receipt, Storage, and Maintenance (REB)	Re-entry Body (REB)	AL
91B	ASROC Overhaul, Test, Repair, and Stow	ASROC & ASTOR	AF
91C	Torpedo Mk 44, Mk 46, Mk 48, Test, Repair, and Stow	Torpedo	AA
91D	SUBROC/TOMAHAWK Land Attack Missile System Nuclear	SUBROC Mk-14	AG
91E	Mk 48 Torpedo/Cruise Missile	Mk 48	AH

Repair W/C Code	Name	Abbreviated Name	Supply ID Code
91Q	Weapons Quality Assurance	Wpns Quality Assur	AM
92A	Sound Analysis Service	Sound Analysis	5S
93A	Non-Destructive Testing	Non-Destructive, QA	62
93B	Quality Assurance Service	Qlty Assur Svc	63
94A	Nucleonics and Radcon Service	Nucleonics, Radcon	5T
95A	Water Chemical Lab	Water Chemical Lab	5V
95B	Spectrometer Lab Service	Test/Spectromtr Lab	5W
96A	Mechanical Standard	Mechanical Standards	5Y
97B	Aircraft Launch & Recovery (for SIMA Portsmouth use only)	ACFT L&R	1B
97C	Non-Skid Service Shop	Non-Skid Shop	1C
97D	Ground Support Equipment	Support Eqpt	1D
97E	Aviation Ordnance Shop	Aviation Ordnance	1E
97F	Aviation Fuels Shop	Aviation Fuels	1F
97J	Manlifts	Manlifts	4B
97M	Contractor Support	Yellow Gear	3D
97R	Helo Landing Syst Recovery Assist, Secure, Traverse	HLST/RAST	1R
97W	Weapons Elevator Support Unit	WESU	1W
970	Public Works	Public Works	Z0
973	Comm Elec Safety	Comm Elec Safety	Z0
974	Eng Elec Safety	Eng Elec Safety	Z0
981	Tiger Team	Tiger Team	Z0
982	Depot Tiger Team	Depot Tiger Team	Z0
983	DIRSSP	DIRSSP	Z0
990	Other Department	Other Dept	ZZ
991	Ship's Force (S/F)	Ships Force (S/F)	Z0
993	Commercial Industrial Services (CIS)	CIS	Z0
999	Other (Non-IMA)	Other (Non-IMA)	ZZ
99B	Paint Locker	Paint Locker	6K
FCA	Field Calibration Facility (Gauge/Meters)	FCA	Z0
RD00	Repair Department (10A)	R00	DJ
RD01	Hull Systems Repair & Services	R01	DK
RD02	Mechanical Systems Repair Division	R02	DL

Repair W/C Code	Name	Abbreviated Name	Supply ID Code
RD03	Electrical Systems Repair Division	R03	DM
RD04	Electronic Systems Repair Division	R04	DN
RD05	Combat Systems Repair Division	R05	DP
RD06	Nuclear Service and Reoaur Division	R06	DQ
WI05	ARMORY	ARMORY	DR
WR00	Weapons Repair Administration	W00	DC
WR01	Torpedo Repair	W01	DD
WR02	Fire Control Repair	W02	DE
WR03	Special Weapon Repair Ord Services at NSSF	W03	DF
WR04	Missile and Launcher Repair	W04	DG
WR05	Navigation Repair	W05	DH
WR06	Weapons Quality Assurance	W06	DI

IN PROGRESS (entered on site-specific detail work sheet)

Coded information that indicates the progress of the job at different stages of accomplishment. Standard job progress reporting and monitoring is performed by each work center at the outside repair activity involved in the repair. Reported information includes "in-progress" information, which is coded as follows:

Code	Description
A	AWAITING PARTS/SUPPLIES/TOOLS
B	AWAITING TRANSPORTATION
C	AWAITING QA INSPECTOR
D	AWAITING NDT
E	AWAITING FIREWATCH
F	AWAITING ACCESS TO SHIP (QUARTER-DECK CLEARANCE)
G	AWAITING RIGGERS/CRANE SERVICES/SCAFFOLDING BARGE
H	MAKING SPECIAL TOOL/PART
I	AWAITING AWC/OTHER CRAFT
J	AWAITING TAG OUT
K	AWAITING ADDITIONAL REFERENCE MATERIAL
L	AWAITING SHIPS FORCE
M	SHIP'S DRILLS

N	SHOP EQUIPMENT INOPERATIVE
O	CHANGE IN WEATHER

Rework. Unplanned delay caused by the need to repeat previously accomplished work due to poor workmanship or the omission of work steps:

Code	Description
P1	FAILED TEST
P2	RE-LAP-RE-GRIND
P3	WRONG MATERIAL
P4	WRONG MEASURE
P5	MISCELLANEOUS

Change of Normal Method/Tools Not Used. Unplanned delay caused by the need to correct a deficiency that the normal shop method of repair could not or did not correct:

Code	Description
Q1	NEW SET-UP
Q2	PARTS FROZEN
Q3	DEPARTURE FROM SPECIFICATIONS
Q4	PART BUILD-UP
Q5	MISCELLANEOUS
R	OTHER THAN THE ABOVE

INSURV NUMBER (entered on 2K)

Number assigned by INSURV to the applicable deficiencies identified during the INSURV inspection. (Refer to Chapter 9)

INTEGRATED PRIORITY (entered on 2K)

A sequential number to indicate its priority relative to other deferred work for an availability.

IUC/REPAIR ACTIVITY/TYCOM REMARKS (entered on 2P)

Remarks relating to the repair job by the IUC, the repair activity, or the TYCOM.

IUC SCREENING (entered on 2K)

Recommendation by the IUC or designated representative indicating the action to be taken using one of the screening codes listed under the data element "SCREENING (TYCOM)".

IUC SIGNATURE (entered on 2P)

The initials of the IUC indicating the document was screened and is recommended for accomplishment.

JOB CONTROL NUMBER (JCN) (entered on 2K, CK, 2P and 2L)

Consists of the Unit Identification Number (UIC), the Work Center (WC), and the Job Sequence Number (JSN). It is the key identification for maintenance actions and their related supply documents. The JCN is used to identify the maintenance action and to relate all of the parts used when a ship reports a maintenance action. It is also the link for associating upline reporting of a maintenance action when more than one activity is involved. It is important that all activities involved continue to use the same JCN on all maintenance and supply documents that apply to that particular maintenance action.

JOB DESCRIPTION/REMARKS (entered on CK)

Any remarks relating to the accomplishment of the maintenance action being reported. In some cases, the alteration directive will specify that certain information be documented.

JOB ORDER NUMBER (entered on 2K)

The job order number assigned by the activity performing work.

JOB SEQUENCE NUMBER (entered on 2K, CK, 2P, and 2L)

A 4-character number assigned by the work center to the maintenance action, or assigned by the outside activity performing the work. This is a number assigned sequentially from the Ship's Force Work List (SFWL)/Job Sequence Number (JSN) Log.

JULIAN DATE (entered on 2K, CK, 2P, and 2L)

A 4-character entry composed of the last digit of the calendar year followed by the numerical day of the year (e.g., 1 January 1994 is "41" and 31 December 1993 is "3365").

KEY EVENT (entered on 2P)

An occurrence during a tended unit's availability which affects or is affected by the repair activity's productive effort; e.g., docking, undocking, boiler light-off, weapons handling, fuel/defuel, etc. Key events are to be identified by assigning a 2-digit numeric code to each event and assigning an abbreviation of 15 characters maximum to that code. When more than 99 key events are required, the code can be assigned using alphanumeric combinations. The Key Event code and definition is

assigned and managed by TYCOM instruction. Repair activities must ensure continuity of schedules by using codes mutually agreed to by TYCOM representatives. Note: some automated systems allow for a four-digit code to be entered (refer to the TYCOM instruction).

KEY OPERATION (KEY OP) (entered on 2P)

Assigned numbers indicating the logical sequence of the task identified. For example:

Key Operation (K/O)	Task
01	Disconnect & Deliver
02	Disassemble
03	Replace Bearings
Etc.	Etc.

LEAD PLANNING & ESTIMATING CODE (entered on 2K)

The code assigned to the lead planning and estimating organization.

LEAD REPAIR WORK CENTER (LWC) (entered on 2K and 2P)

The code of the lead repair work center assigned to the job. The first character of the code is left-justified.

The following codes indicate the IMA department to which the action work center is assigned; they are used to process IMA Performance Summaries at both IMA and TYCOM levels:

Department Key

A = Dry Dock
B = Other Departments
F = Special
K = Temporary IMA
L = Reservist
P = Civilians
R = Repair Department
Z = Other Activities

NOTE:

Variable department names may be assigned as directed by the TYCOM using the letters "G", "H", and "J".

Refer to data element "IMA Repair Work Center" for a list of authorized IMA repair work center codes.

LOCATION (entered on 2K and CK)

The location of the equipment on which maintenance is required or was performed.

a. COMPARTMENT. Enter the compartment number identified on the compartment check-off list.

b. DECK-FRAME-SIDE. Enter the deck, frame, and side that best describes the location of the equipment.

c. If neither the compartment nor the deck-frame-side is appropriate, enter the name of the location (e.g., "FANTAIL", "FLIGHT DECK").

d. For submarines use standard abbreviation for locations (e.g., "OPSUL").

For shipboard locations, see General Specification for Ships of the U.S. Navy (NAVSEA PUB-AA-SPN 010/GEN SPEC) (NOTAL).

MAINTENANCE INDEX PAGE NUMBER (MIP) (entered on CK)

The MIP number covering the affected equipment. For like equipment installations, i.e., exchanges, enter the MIP covering the deleted equipment. For new installations, enter the MIP number when available; if not available, enter "NA".

MAN-HOURS EXPENDED (entered on 2K)

The man-hours expended on the last day the repair work center is involved in the work request (NOT the total man-hours of the work request).

METER READING (M/R) (entered on CK)

Used to indicate if the equipment or any of the equipment components/subunits of the equipment being reported have time meters installed.

METER READING (M/R) (entered on 2K)

(An expected entry for Selected Level Reporting (SLR) Level 1/Level 2 equipment.) The meter reading (to the nearest whole hour) at the time of failure. If the equipment has more than one meter, designate the meter being recorded in "REMARKS" using the letters "METRED" followed by the meter designator. An asterisk (*) must precede and follow meter designation as shown

in the example below. The required meter is that associated with the functional major unit that failed.

Example: *METRED-1A2M1*

NAMEPLATE DATA (entered on CK)

Data that helps identify the equipment. Enter information available from the following list:

a. Contract Number or Procurement Document Number.

b. Part Number/Model Number/Drawing Number.

c. Commercial and Government Entity (CAGE) code, or if not available, the name and address of the manufacturer.

d. Any additional information, such as physical characteristics and manufacturer's identification, that is readily available and provides a description of the use or operation of the component.

NEXT HIGHER ASSEMBLY (entered on CK)

The nomenclature and serial number (SN) of the Next Higher Assembly (NHA) in which the equipment/component identified is a part of. If the SN is unavailable, use the locally assigned NHA number. The NHA is usually identified in the technical manual and the COSAL.

NORMALLY DONE BY (entered on 2P)

Indicates where this particular type maintenance is normally performed (S/F, IMA, Depot), which allows the collection of data for evaluation of IMA costs relative to other maintenance activities.

PERIODICITY (entered on 2P)

Identifies the number of months between which periodic maintenance requirements are to be performed.

PERIODIC MAINTENANCE REQUIREMENT (entered on 2P)

The code of a specific periodic maintenance requirement (e.g., "MRC-G40 A1"), a Planning and Engineering for Repairs and Alterations (PERA) code, or a Metrology Automated System for the Uniform Recall and Reporting (MEASURE) code identifying a periodic maintenance requirement.

PRE ARRIVAL/ARRIVAL CONFERENCE ACTION/REMARKS (entered on 2K)

Remarks provided by the repair activity determined necessary to facilitate repairs or that would require attention of the originating activity.

PRIORITY (PRI) (entered on 2K)

Identifies the priority of the deferred maintenance action:

Code	Description
1	MANDATORY. Critical safety or damage control item. Required for performance of ship's mission. Required to sustain bare minimum acceptable level of human needs and sanitation. C-4 CASREP (Casualty Report) on equipment.
2	ESSENTIAL. Extremely important safety or damage control item. Required for sustained performance of ship's mission. Required to sustain normal level of basic human needs and sanitation. Required to maintain overall integrity of ship or a system essential to ship's mission. Will contribute so markedly to efficient and economical operation and maintenance of a vital ship system that the pay-off in the next year will overshadow the cost to accomplish. Required for minimum acceptable level of preservation and protection. C-3 CASREP on equipment.
3	HIGHLY DESIRABLE. Important safety or damage control item. Required for efficient performance of ship's mission. Required for normal level of human comfort. Required for overall integrity of equipment or systems that are not essential, but are required as backups in case of primary system failure. Will contribute so markedly to efficient and economical operation and/or maintenance of a vital ship system that the payoff in the next year will at least equal the cost to accomplish. Will effect major reduction in future ship maintenance in an area or system that presently cannot be maintained close to acceptable standards. Required to achieve minimum acceptable level of appearance. C-2 CASREP on equipment.
4	DESIRABLE. Some contribution to efficient performance. Some contribution of normal level of human comfort and welfare. Required for overall integrity of other than an essential system or its backup system. Will contribute to appearance in an important area. Will significantly reduce future maintenance.

QUALITY ASSURANCE REQUIREMENTS (entered on 2P)

Identifies the specific planning actions, work controls, and auditable records in support of individual TYCOM management needs. These special requirements are indicated by an "X" placed in the appropriate reporting field.

QUANTITY (entered on CK)

The number of like equipment identified in the work center that was removed, installed, or modified to accomplish the maintenance action. If the Component Serial Number field has an entry, the quantity entered must be "1". Only one piece of equipment can be uniquely identified by a single serial number.

RATE (entered on 2K)

The rank/rate of the first contact/maintenance person. The following examples apply:

Rank/Rate Code	Entry
Officers	OFF
ET1	ET1
Civilian	CIV
GMG2	GMG2
FTGSN	FTGN
EMFN	EMFN
FN	FN

RECORD IDENTIFICATION NUMBER (RIN) (entered on CK)

Identifies a specific equipment record within the SNAP, WSF, and SCLSIS databases. For deletions, removals, and modifications, enter the RIN for the component as listed in Part I, Section C of the COSAL. For installations and additions, leave applicable fields blank.

REMARKS/DESCRIPTION (entered on 2K and CK)

FOR A MAINTENANCE ACTION (2K). Provide information that describes the problem and what caused the failure (if known); followed by what needs to be done to correct the problem. Separate the problem description and corrective action entries with three X's (i.e., "WHAT IS WRONGXXXWHAT MUST BE DONE"). If reporting the completion of a maintenance action, the field should describe the trouble and the corrective action. If necessary, this field is used to record safety related data and for expected SLR Level 2 data.

For SLR Level 2 reporting the following narrative information is expected:

a. Any problems encountered which hindered or delayed completion of the maintenance action

b. Reference Designators/ Part Serial Numbers – Reference Designators and/or Serial Numbers of removed and installed parts

c. Symptoms of the failure

d. Logistics Deficiencies - part number(s) of parts replaced or causing logistic delays (if the part was obtained by cannibalization identify source)

e. Description of difficulties with or deficiencies of fault isolation procedures, maintenance documentation, or test equipment

f. Full description of multiple events within a maintenance action

g. Any other helpful information concerning the event

For SLR Level 3 Specialized Reporting the data will be in a structured-narrative format as designed in a unique template.

FOR A CONFIGURATION CHANGE (CK). Enter information that describes the accomplishment of the action. Occasionally, alterations specify that certain information be documented. If an "X" is entered in the M/R field, identify each equipment and enter "M/R" followed by the time meter reading.

REMARKS/SKETCHES (entered on 2L)

Required amplifying information related to a maintenance action. Include drawings and sketches, or multiple item serial numbers and locations for which identical maintenance requirements exist from an outside activity.

REPAIR ACTIVITY UIC (entered on 2K)

The UIC of the activity performing work for the originating ship.

REPAIR WORK CENTER (RWC) (entered on 2K)

Used by the repair activity for internal planning and scheduling, a 3 or 4-character code identifying the lead work center assigned to the job.

R/M (Maintenance Indicator) (entered on 2K)

Either an "R" or "M", used by INSURV, which identifies equipment that shows low reliability or unusual maintenance. "R" indicates low reliability, requiring frequent corrective maintenance; "M" indicates poor maintainability, requiring unusual maintenance efforts due to installation or design.

S (Safety Identifier) (entered on 2K)

The code "S", used by INSURV to identify those discrepancies which might cause injury to personnel or material damage.

SAFETY HAZARD (entered on 2K)

A code number selected from the Risk Assessment Codes (RAC) that describes a problem or condition which has caused, or has the potential to cause injury to personnel and/or damage to material, enter the applicable RAC described in codes "1" through "5". If the documented maintenance action is not safety related, enter "". RAC selections for the safety hazard entry are:

Code	Risk Assessment Description
1	CRITICAL SAFETY OR HEALTH DEFICIENCY-CORRECT IMMEDIATELY. This category identifies deficiencies which present a critical safety hazard to personnel or machinery, or a health hazard to personnel, and which must be corrected immediately. This code is used for items such as electric shock hazards, inoperative interlocks or safety devices, missing or damaged lifelines, inoperable escape scuttles, refrigerants (air conditioning or refrigeration) leaking into confined spaces, leaking components containing PCBs, and the like. All efforts must be exerted to correct these items prior to any other maintenance deficiencies. Suspension of use of the equipment/system/space is mandatory.
2	SERIOUS SAFETY OR HEALTH DEFICIENCY-SUSPENSION OF EQUIPMENT/SYSTEM/SPACE USE IS REQUIRED. This category deals with serious safety hazards to personnel or machinery, or health hazards which must be corrected prior to resuming use of the equipment/system/space.

3 MODERATE SAFETY OR HEALTH DEFICIENCY-WAIVER OF EQUIPMENT/SYSTEM/SPACE USE IS GRANTED PENDING CORRECTION OF THE ITEM. This category is used in cases where the equipment/system/space can be operated or utilized in a satisfactory manner without greatly risking physical injury, serious damage to the equipment/system/space, or greatly risking the health of personnel.

4 MINOR SAFETY OR HEALTH DEFICIENCY. This is a category of safety or health deficiencies which must be corrected when resources become available.

5 NEGLIGIBLE SAFETY OR HEALTH DEFICIENCY. This category identifies deficiencies which are noted for record purposes and may be corrected when other work is accomplished on the equipment/system/space.

X SAFETY RELATED INDICATOR

0 MAINTENANCE ACTION IS NOT SAFETY RELATED.

NOTE:

Codes "6" through "9" may be locally assigned by TYCOMs for additional safety codes required.

A brief explanation must be included in the Remarks/ Description field. For example: "RE-INSPECTION OF SEPARATOR FOR PRESENCE OF OIL AFTER RINSE. MRC A-27 EVIDENTLY NOT DONE. PRESENCE OF OIL RESULTED IN FIRE IN HP AIR SYSTEMS WHEN COMPRESSOR OPERATED UNDER LOAD. FIRE BADLY BURNED VALVE AHP-287, REQUIRING REPLACEMENT." The ship's 3-M system coordinator will forward a copy of all OPNAV 4790/2K documentation having an entry in this field to the safety officer for review.

SCHEDULED COMPLETION DATE (entered on 2K and 2P)

The Julian date on which all work on the job is scheduled to be completed by the activity assisting the originating ship.

SCHEDULED START DATE (entered on 2K and 2P)

Used by the repair activity, the Julian date on which work on the job is to begin.

SCREENING ACTION (entered on 2P)

Appropriate action to be taken to accomplish the maintenance as directed by the TYCOM. The field may also be used by the IUC, but the TYCOM representative's decision has precedence. The IUC/TYCOM representative must indicate the level at which the maintenance, if approved, is to be done.

SCREENING (IUC) (entered on 2K)

The intermediate unit commander (IUC) or designated representative recommended action to be taken using one of the codes listed below under SCREENING (TYCOM). The IUC is that officer in the chain of command between the ship and the TYCOM.

SCREENING (TYCOM) (entered on 2K)

The action to be taken as determined by the type commander (TYCOM) or designated representative. Acceptable screening codes are:

Code	Description
1	Depot (shipyard or ship repair facility) Accomplish
1A	Depot Assisted by Ship's Force
1S	Ship to Shop
1M	Accomplish with Modification
2	Intermediate Maintenance Activity (IMA) (tender/repair ship, etc.) Accomplish
2A	IMA Assisted by Ship's Force
2S	Ship to Shop
2M	Accomplish with Modification
3	TYCOM Support Unit (TSU) (floating dry dock, etc.) Accomplish or Technical Assistance from NAVUNDERSEAWARFARCENDET/FTSCLANT/FTSCPAC/Contractor Representative
3A	TSU Assisted by Ship's Force
3S	Ship to Shop
3M	Accomplish with Modification
4	Ship's Force Accomplish
5	Deferred
5A	Insufficient Time in the Availability to Complete the Task
5B	Lack of Shipyard Capability
5C	Lack of Material
5D	Lack of Funds
5E	Not Required During this Availability
5F	General
6	Not Authorized
6A	Not Technically Justified
6B	Covered by an Existing Ship Alteration
6C	Duplicate of Another Job Control Number (JCN)
6D	Not Cost Effective
6E	General
8*	Disapproved
9**	Remove from Current Ship's Maintenance Project (CSMP). Pass to history (to be assigned by TYCOM only)

* This screening code disapproves the accomplishment of a work item by an outside activity. It does not prevent entry of the deferral into the CSMP, which is the decision of the commanding officer.

** This screening code is restricted to the removal of INSURV items from the CSMP for which, in the opinion of the ship's IUC and TYCOM, the ship has no responsibility for accomplishment.

SECAS OFFICE USE (entered on CK)

No longer in use.

SECOND CONTACT/SUPERVISOR (entered on 2K and 2L)

The supervisor of the first contact/maintenance person indicating he screened the maintenance action entry for completeness and accuracy.

SELECTED EQUIPMENT LIST (entered on 2K)

Selected equipment under an intensive management program requiring additional usage data to be collected. See data element "REMARKS/DESCRIPTION" for reporting requirements.

SERVICE APPLICATION CODE (SAC) (entered on CK)

A code used to group equipment, components, assemblies, etc., according to a particular system or service application on-board ship. This code is similar to the HSC in purpose, but does not provide a hierarchical structure. The SAC is a code assigned by the supply department.

SHIP'S FORCE MAN-HOURS (S/F MHRS) (entered on 2K)

The total man-hours (to the nearest whole hour) that ship's force used doing the maintenance after submitting the deferral. It includes witnessing of tests, and those man-hours expended in reinstallation, test, documentation, etc. Documentation time can not exceed "1" hour.

SHIP'S FORCE MAN-HOURS EXPENDED (S/F MHRS. EXP.) (entered on 2K and CK)

FOR A MAINTENANCE ACTION (2K). The total man-hours (to the nearest whole hour) used by all work centers in the maintenance action up to the deferral time; include documentation time (should not exceed 1 hour).

FOR A CONFIGURATION CHANGE (CK). The total number of man-hours expended by ship's force (and not previously reported) in completing and documenting the maintenance action (documentation time should not exceed 1 hour). Man-hours expended by other than ships force are to be documented separately.

SHIP'S FORCE MAN-HOURS REMAINING (S/F MHRS. REM.) (entered on 2K)

The ship's force man-hour estimate (to the nearest whole hour) remaining to complete the maintenance action. If TYCOM allows an automatic close out of the deferral by the IMA, enter "AUTO"; this is a request to the IMA to complete the maintenance action with no further documentation from the shop after the job has been accepted by the originator (authorized signature). If the originating ship does not receive CSMP support from the IMA doing the work, do not use the AUTO close out feature.

SHIP'S NAME (entered on 2K, CK, 2P, and 2L)

The name of the activity originating the maintenance action.

SHIP'S UNIT IDENTIFICATION CODE (UIC) (entered on 2K, CK, 2P, and 2L)

The 5-digit UIC of the activity initiating the maintenance action. The Navy Comptroller (NAVCOMPT) Manual, Volume 2, Chapter 5 lists UICs. For service craft or boats without a UIC use the UIC of the parent activity.

FOR OTHER THAN U.S. NAVY SHIPS - The UIC for other than U.S. Navy ships will have an "A" as the first character followed by a sequential number related to the number of foreign units in availability.

SPECIAL DATA (entered on 2P)

Data element currently not assigned for use. Available for future expansion.

SPECIAL PURPOSE (entered on 2K)

A code used to indicated that quality control and quality assurance standards are required. Refer to TYCOM instructions for additional information relative to these entries.

Enter the code in the designated field "A" through "L" as follows:

Field A The department head will enter the KEY EVENT code from the ISIC provided Key Event Schedule.

Field B Enter the code "SS" if the job requires work within SUBSAFE boundaries or involves SUBSAFE materials. (Refer to COMSUBLANT/COMSUBPACINST 4855.2.)

Field C Enter the code "L1" if the job requires work within Level I boundaries or involves Level I material. (Refer to COMSUBLANT/COMSUBPACINST 4855.2.)

Field D Enter the code "08" if the job is associated with nuclear equipment. (Refer to NAVSEAINST 9210.4A (NOTAL).)

Field E Enter the code "RC" if the job requires radiological controls (RADCON). (Refer to NAVSEA technical publication 389-0153.)

Field F Enter the code "DD" if the job requires dry docking to accomplish.

Field G Enter the code "NC" for critical noise deficiencies or "NP" for potential radiated noise deficiencies.

Field H Reserved for future use.

Field I Reserved for future use.

Field J Reserved for future use.

Field K Reserved for future use.

Field L Enter the code assigned to the visiting activity. This will identify the visiting activity as the originator of the deferral. Information reported as directed by the cognizant TYCOM.

SPECIAL REQUIREMENTS (entered on 2P)

KEY EVENT. 2-digit number identifying an event which influences a job or is influenced by the completion of a job, (e.g., job requiring completion before undocking). Blank indicates that the job is not associated with a key event.

SPECIAL INTEREST. A field used to indicate the job has been selected for job management reports, and identifying the job as having significant management interest. An "X" is the common entry for this field.

DRY DOCK REQUIRED. A field used to show that the requested maintenance requires the ship to be dry docked. An "X" is the common entry for this field.

PRE-OVERHAUL TEST REQUIRED. A field used to identify a specific test required prior to an equipment or ship overhaul. An "X" is the common entry for this field.

POST-OVERHAUL TEST REQUIRED. A field used to identify that a test must be completed after equipment or ship overhaul. An "X" is the common entry for this field.

DEPARTURE REQUIRED. A field used to indicate that if the maintenance is not accomplished to specifications, notice of the departure must be sent to the TYCOM. An "X" is the common entry for this field.

STATUS (STA) (entered on 2K)

A code that describes the effect of failure or malfunction on the operational capability of the equipment or system when the need for maintenance was first discovered:

Code	Description
1	Operational
2	Non-Operational
3	Reduced Capability
0	Not Applicable (use if reporting printing services, etc.)

SUFFIX (entered on 2K)

Used by INSURV to insert additional required numbers between sequential numbers.

TASK (entered on 2P)

The description(s) of the task(s) for which the "LEAD" and "ASSIST" repair work center(s) identified are responsible.

TECHNICAL DOCUMENTATION (entered on 2P)

Blueprints, technical manuals, etc., which may be useful to the IMA in providing required assistance. Indicate with an "X" if the publications are held by the tended unit or the IMA.

TECHNICAL MANUAL (TM) NUMBER (entered on CK)

The TM number covering the component. For removals and modifications enter the appropriate TM number for the equipment. For like equipment installations (i.e., exchanges), enter the TM

number of the deleted equipment. For new installations, enter the TM number covering the component. If unavailable, enter "NA".

TROUBLE ISOLATION (TI) (entered on 2K)

A single numeral (1-9) to indicate, to the nearest 10 percent, the percentage of active maintenance expended in troubleshooting. If no troubleshooting is involved, enter "f". Examples: "2" = 20%, "3" = 30%, "7" = 70%, etc.

TYCOM AUTHORIZATION (entered on 2K)

Signature/entry of the TYCOM representative screening deferrals.

TYCOM (SCREENING) (entered on 2K)

Refer to data element SCREENING (TYCOM).

TYCOM SIGNATURE (entered on 2P)

Signature of the IUC and/or TYCOM representative indicating the maintenance request has been screened.

TYPE OF AVAILABILITY (T/A) (entered on 2K)

Type of availability recommended for performance of a deferral.

Code	Description
1	Depot (shipyard or ship repair facility)
2	Intermediate Maintenance Activity (tender, repair ship, etc.)
3	TYCOM Support Unit (floating dry dock, etc., or technical assistance from NAVUNDERSEAWARCEN, DETACMENT FTSCLANT, FTSCPAC or contractor representative)
4	Ship's Force
0	Not Applicable

U (Mission Degrading) (entered on 2K)

Used by INSURV, field identifies certain deficiencies which are considered as preventing the ship from carrying out some part of its mission.

UNIT IDENTIFICATION CODE (UIC) (entered on 2K, CK, 2P, and 2L)

Identifies the Unit Identification Code of the activity originating the maintenance action. For service craft or other boats without their own UIC, use the UIC of the parent activity.

WHEN DISCOVERED (WND) (entered on 2K)

Identifies when the need for maintenance was discovered.

Code	Description
1	Lighting Off or Starting
2	Normal Operation
3	During Operability Tests
4	During Inspection
5	Shifting Operational Modes
6	During PMS
7	Securing
8	During AEC (Assessment of Equipment) Program
9	No Failure, PMS Accomplishment Only
0	Not Applicable (use when reporting printing services, etc.)

WHEN DISCOVERED DATE (entered on 2K)

The Julian Date when the equipment of the system failure was discovered.

WORK CENTER (WC) (entered on 2K, CK, 2P, and 2L)

Two basic types of work center codes exist. Their definition and application are as follows:

SHIPS. Ships use a 4-position work center code. The first two positions identify the department and division. The last two positions identify the division work center.

REPAIR DEPARTMENTS OF TENDERS, SIMAs, AND OTHER IMAs. These organizations use a 3-position work center code to identify the repair shops (e.g., "10A", "67A", "91A", etc.).

See data element "IMA Repair Work Center" for a list of authorized IMA repair work center codes.

WORK REQUEST ROUTINE (entered on 2K)

The appropriate Expanded Ship Work Breakdown Structure (ESWBS), Ship Work Breakdown Structure (SWBS), Ship Work Authorization Boundary (SWAB), or Ship Work Line Item Number (SWLIN), as directed by the TYCOM. This entry is made to integrate the deferral into applicable work packages.

YYMM ISSUED (entered on 2P)

Four numbers used to identify the year and month during which the periodic maintenance requirement entered was issued. The first two digits identify the year and the last two digits identify the month.

MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

APPENDIX B

SHIP'S 3-M FORM PREPARATION INSTRUCTIONS

APPENDIX B

SHIP'S 3-M FORM PREPARATION INSTRUCTIONS
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APPENDIX B

SHIP'S 3-M FORM PREPARATION INSTRUCTIONS

B-1 CONFIGURATION CHANGE FORM (NAVSEA 4790/CK)

The NAVSEA 4790/CK Form is used to report completion (or partial completion) of alterations, maintenance actions that resulted in a configuration change, and to correct discrepancies and errors in the configuration files.

Three blocks at the top of the form are used to specify what type of action is being reported (a configuration file correction “CONFIG FILE CORR” a completed maintenance action that had no prior deferral “COMP M/A NO DEFL”). The rest of the form is separated in to four sections.

a. Section I – Job Identification. This section identifies the system or equipment involved in the configuration action. If a component/sub-unit are being reported, the Job Identification in this section must be that if the highest assembly. Components/sub-units are reported in Section III.

b. Section II – Job Description/ Remarks. This section contains remarks relating to the accomplishment of the action. In some cases, an alteration directive will specify that certain information be documented.

c. Section III – Component Configuration Change Identification. This section contains information on the component(s) affected by the maintenance (configuration change) action. The Job Identification Level (section I) will be completed to the highest assembly directly affected by the change. The sub-units (components) are reported to the individual APL level in SECTION III. A NAVSEA 4790/CK allows only one component (sub-unit) to be reported per form. When multiple sub-units need to be reported, “CONTINUATION SHEET (S)” NAVSEA 4790/CK(C), THAT CAN REPORT UP TO FOUR COMPONENTS PER Form can be attached. The same JCN as assigned to the higher level assembly maintenance action recorded in SECTION I is to be continued on each component reported.

d. Section IV – SPECIAL PURPOSE. This section is filled in onboard, with the exception of Block 30 (is no longer applicable).

NOTE:

Examples of completed NAVSEA 4790/CK forms for various reporting situations can be found following these written instructions.

B-1.1 Procedures for Reporting Configuration Change (NAVSEAINST 4790/CK Form)

a. Place an "X" in the appropriate block at top of form to indicate the type of action being reported, "COMP M/A NO DEFL" or "COMP DEFL".

b. SECTION I_- JOB IDENTIFICATION

Block A Enter SHIP'S NAME

Block B Enter SHIP'S HULL NUMBER

JOB CONTROL NUMBER (Blocks 1 - 3):

Block 1 SHIP'S UIC: Enter the UIC of the activity receiving the maintenance action.

Block 2 WORK CENTER: Enter the code of the shipboard work center responsible for the equipment.

Block 3 JOB SEQ. NO.: Enter the four character job sequence number assigned by the work center supervisor. This is an entry assigned sequentially from the SFWL/JSN Log.

NOTE (Blocks 1, 2, 3):

If the configuration change being reported is not an alteration and closes a job previously deferred and on the CSMP, enter the JCN of the opening deferral. If the maintenance action is the accomplishment of an alteration, enter the JCN from the alteration record (EXSA2134, OXTY1016, WXSP1124).

Block 4 ALTERATIONS (SHIPALT, FLD. CHG., ETC.): If applicable, enter the alteration number from the authorizing directive.

For Ship Alterations (SHIPALTs), enter the alteration identification exactly as it appears on the Ship Alteration (SHIPALT) Record. Record the

alteration type "SA" in the first two positions, ship type starting in position three, and the alteration number starting in the 7th position of the block (i.e., SASSBNf342130). Enter the title code from the alteration record in the last right-hand position of the block.

For all other alteration types, enter the alteration type character code in the first two positions of the block. Enter the alteration number starting in position four (i.e., OA f96999, FC 29, TY 0132).

If an alteration identification number is not provided with the alteration record, leave blank. Following are the authorized alteration prefix codes:

SA = SHIP ALTERATION
OA = ORDNANCE ALTERATION
BA = BOAT ALTERATION
FC = FIELD CHANGE
MA = MACHINERY ALTERATION
SI = SYSCOM COMMAND INSTRUCTION
EC = ENGINEERING CHANGE
HI = HABITABILITY
TY = TYCOM DIRECTION
TD = TECHNICAL DIRECTIVE
SP = STRATEGIC SYSTEMS PROJECT OFFICE ALTERATION
SC = SERVICE CHANGE
TR = TRIDENT ALTERATION
EP = ENGINEERING CHANGE PROPOSAL
MO = CRYPTO EQUIPMENT MODIFICATION
AR = ALTERATION REQUEST. May be originated by a ship to request an alteration design. Enter and left-justify the authorized prefix "AR" followed by a blank space, any number the ship assigns for its own control.

Block 5 EIC: Enter the Equipment Identification Code (EIC) for the equipment identified in the Equipment Noun Name field (Block 7). EIC's are listed in the SCLSIS Index Report or Ship's 3-M Reference Compact Disk (CD).

NOTE:

When documenting 3-M requests for Fleet/Depot assistance, a special Equipment Identification Code (EIC) of “ZOZZ” for NAVSEA 08 and “ZOYY” for DIRSSP shall be used and the remaining data must be unclassified.

Block 6 ACT. TKN: Enter the appropriate Action Taken code from the lower section of the NAVSEA 4790/CK form or from the following list:

Code	Descriptions
5A	Partially Completed Alteration. The IMA must describe in the Job Description/Remarks section what was done and the O-level what remains to be done.
5B	Fully Completed Alteration
5C	Fully Completed Equivalent to Alteration
5D	Alteration Directive Not Applicable

NOTE:

Use of a number 5( ) code requires an entry in Block 4 "Alteration Identification

1	Maintenance Action Completed; Parts Drawn from Supply
2	Maintenance Action Completed; Required Parts Not Drawn from Supply (local manufacture, pre-expended bins, etc.)
3	Maintenance Action Completed; No Parts Required

NOTE:

The following second character codes can be used with the above Action Taken codes 1, 2, or 3 as directed by the TYCOM:

A	Maintenance Requirement Could Have Been Deferred
B	Maintenance Requirement Was Necessary
C	Maintenance Requirement Should Have Been Done Sooner
M	High Cost Repairs
T	The Equipment Being Reported Had a Time Meter

Block 7 EQUIPMENT NOUN NAME: If the maintenance action is the accomplishment of a SHIPALT, enter the equipment Noun Name from the SHIPALT record. Otherwise, enter the equipment nomenclature /description of the equipment or system on which the maintenance was performed. If the maintenance action affects several components, enter the name/designator of the highest assembly. For HM&E equipment, enter the noun name. For electronics equipment, enter the Army-Navy (AN) type designator or commercial model number. For ordnance equipment, enter the system/equipment nomenclature, followed by the Mark and Mod numbers, e.g., Launch System 36/1.

Block 8 S/F MHRS. EXP.: Enter the total number of man-hours expended by ship's force (and not previously reported) in completing and documenting the maintenance action. Man-hours expended by others tasked to perform equipment maintenance are to be documented separately.

Block 9 ACT. MAINT. TIME: Used for SEL equipment only. Enter the total number of clock hours expended to complete the maintenance.

Block 10 COMP. DATE: Enter the Julian date the maintenance action was completed.

Block 11 M/R (Meter Reading): Enter a "X" if the equipment or any of the equipment components / sub-units to be identified in Section III have time meters installed.

B-1.2 Section II - Job Description/Remarks

Block 12 JOB DESCRIPTION/REMARKS: Enter any information/remarks relating to the accomplishment of the action. In some cases, an alteration directive will specify that certain information be documented.

If an "X" is entered in Block 11, identify in Block 12 each equipment name followed by "M/R" and the time meter reading.

B-1.3 Section III - Component Configuration Change Identification

Block 13 COMPONENT NOUN NAME: Enter the noun name of the component removed, installed or modified. For HM&E equipment, enter the noun name. For electronics equipment, enter the “AN” type designator or commercial model number. For ordnance equipment, enter the system/equipment nomenclature, followed by the Mark and Mod numbers, e.g., Launch System 36/1.

Block 14 QUANTITY: Enter the number of like components/sub-units identified in Block 13 that were, removed, installed or modified. The quantity must be "001" if a component identification number is entered in Block 16, or a serial number is entered in Block 17 (see Step 17).

Block 15 CA (Component Action): Enter the code identifying whether the equipment in Block 13 was, removed (R), installed (I), or modified (M). When reporting a configuration file action vice a maintenance action enter for an Add (A), Delete (D), or Correction (C).

Block 16 COMPONENT IDENTIFICATION: Enter the local identification number(s) such as station number or valve mark of the equipment identified in Block 13. This information must be consistent with the quantity entered in Block 14. For electronic (ELEX) equipment, enter the model number, and if available, enter the serial number in Block 17.

Block 17 COMPONENT SERIAL NUMBER: Enter the manufacturer's serial number of the equipment identified in Block 13. If the serial number is not available enter "NONE".

Block 18 COMPONENT APL/AEL: Enter the Component Allowance Parts List/Allowance Equipage List (APL/AEL) of the component identified in Block 13. If not available, the unit's supply department should assign a temporary APL.

Block 19 LOCATION (DECK/FRAME/SIDE): Enter the location (compartment number, deck, frame, or side notation), that best describes the location of the equipment identified in Block 13. If none of the above mentioned location identifications are appropriate,

enter a descriptive term of the onboard location (e.g., FANTAIL, FLIGHT DECK, etc.).

Block 20 EIC: Enter the Equipment Identification Code that best describes the component identified in Block 13.

Block 21 NEXT HIGHER ASSEMBLY: Enter the nomenclature and serial number of the next higher assembly. No entry is required when the component identified in Block 13 is the highest assembly.

Block 22 SAC: Enter the Service Application Code of the component identified in Block 13. SAC codes can be obtained from the supply department.

Block 23 WORK CENTER: Enter the code (Work Center Responsible for Equipment (WCRE)) of the work center having primary maintenance responsibility for the component identified in Block 13.

Block 24 NAMEPLATE DATA: Enter the Contract Number or Procurement Document Number, Part Number/Model Number or Drawing Number, and if available, the Commercial and Government Entity (CAGE) (formerly called Federal Supply Code for Manufacturers (FSCM)). Additional information, if available, such as physical characteristics and manufacturer's identification is useful. No entry is required for modifications and deletions if an APL is listed in Block 13.

Block 25 MIP: Enter the Maintenance Index Page covering the component identified in Block 13 for removals, modifications, changes and deletions. If not available, enter "NA".

Block 26 EOSS: Entry not required when reporting Electronic or Ordnance Configuration Change actions. For HM&E equipment, enter the Engineering Operation Space Sequence (EOSS) Document Code and Control Number of the primary EOSS procedure affected. If more than a component level document is affected, enter only the EOSS component procedure.

Block 27 TM: For removal and modifications, enter the Technical Manual covering the affected component. For like equipment installations, enter the TM

covering the equipment. For new installations, enter the TM when available; if not available, enter NA.

B-1.4 Section IV - Special Purpose

Block 28 RIN: Enter the Record Identification Number as listed in Part I, Section C of the COSAL, for deletions, removals, and modifications. For installations and additions, leave blank.

Block 29 AILSIN: Enter the Automated Integrated Language System Identification Number assigned by the Configuration Data Manager, Platform Manager, or Item Manager. For Electronic equipment, no entry is required unless directed by TYCOM.

Block 30 SECAS OFFICE USE: (Ship's Equipment Configuration Accounting System). Block no longer used.

B-1.5 Procedures For Using CK Continuation Pages

The JCN entry must be the same as on page 1. Up to four components can be reported on the same continuation form, with each separate component block considered a separate continuation page with its own page number. Page number consecutively. If applicable, check the block at the top of each component identification section to indicate that all data to be entered is the same as SECTION III, page 1, except for that data actually entered in the component identification section. An arrow pointing up (-) should be placed in the first block of each blank field to indicate that it is the same as page 1.

For each component reported, the required entries on the continuation pages are the JCN, page number, equipment alteration number (if applicable), and those component identification data elements which differ from SECTION III, page 1 (original CK).

B-1.6 Procedures for Reporting Configuration File Corrections, and Updating the Cosal

B-1.6.1 Correct Errors in A Previous Submission

Print in large letters the word "Correction" at the top of the form. Check the block "CONFIG FILE CORR" at the top right portion of the CK form. Enter the exact JCN (Blocks 1, 2, and 3) and page number of the CK which was submitted in error. Enter action code "C", which indicates "correction" in Block 15. If

the entire configuration data submitted on the previous CK is in error, fill in ALL the blocks with the corrected data and circle the entire form. Otherwise, fill in only the applicable blocks with the correct data and draw a circle around that block.

B-1.7 Correct A Data Element Error in the Ship's Cosal or Cosal Indexes, or Other Such Documents

Check the block (CONFIG FILE CORR) at the top right portion of the CK form. In SECTION I, enter a new JCN in Blocks 1, 2, and 3. In SECTION I, enter a new JCN in Blocks 1, 2, and 3. In SECTION II, Block 12 for "JOB DESCRIPTION" insert the words "CORRECTION OF COSAL", or a description of the type of correction. If the APL is to be corrected, enter the words "CHANGE APL FROM _____" and enter the incorrect APL number. In SECTION III, enter in Block 13 the component noun name from the SCLSIS Index report, COSAL, etc…. Enter in Block 15 code "C" for "correction". Enter the EIC of the component in Block 20. If the correction is for HM&E equipment, also enter the APL in Block 18. Enter the applicable RIN in Block 28. These are the only required data elements that need to be reported along with the corrected information. Next, fill in any other applicable blocks with data. Draw a circle around all blocks with changed information.

B-1.8 Report an Equipment Record Addition/Deletion

Complete the CK as described for "CORRECTING A DATA ELEMENT IN THE SHIP'S COSAL" in the above paragraph, with the following exceptions: In SECTION II, Block 13 enter the words "ON BOARD - NOT COSAL SUPPORTED" or "NOT ON BOARD - COSAL SUPPORTED", as appropriate. In SECTION III Block 15, enter action code "A" for equipment on board but not COSAL supported, or action code "D" for equipment that is not on board but is COSAL supported. For an equipment "ADD", also provide as much additional information as possible (e.g., Serial Number, Next Higher Assembly, if applicable, Location, Work Center, EIC, Nameplate Data, MIP, TMs, etc.). For equipment DELETE, provide the RIN in Block 28 if applicable.

B-1.9 Report the Turn-In/Receipt of Portable Electrical/ Electronic Test Equipment (Peete)

Check the CK Block for "CONFIG FILE CORR" and then follow standard procedures described for "CORRECTING A DATA ELEMENT IN THE SHIP'S COSAL" in the above paragraph.

B-1.10 Handling Procedures

An original and three copies each of the basic CK and related continuation pages are required for documentation. The completed forms are submitted to the work center supervisor and then to the division officer, each of whom reviews the forms for completeness and accuracy and initials in the appropriate blocks at the bottom of each form.

The division officer then forwards all copies of the forms to the supply department. Supply department personnel verify/enter data such as APL/AEL, SAC, and RIN and will resolve any discrepancies noted with the maintenance work center supervisor prior to further routing. Supply department personnel will initial the appropriate block at the bottom of the forms and fill in the sequence number first digit is the last digit of the current calendar year. The remaining four digits indicate the chronological sequence of CK forms being submitted by the ship/activity for the year and retain the second copy. Supply department personnel will ensure the work center entered in Block 23 as the correct work center having primary maintenance responsibility for the equipment (not the supply department work center). The supply department should then forward the original, and first and third copies to the 3-M system coordinator. After reviewing for completeness, initialing and dating in the appropriate block, the 3-M system coordinator submits the original CK to the 3-M ADP facility serving the activity. The third copy is to be maintained in the work center as a suspense copy.

SHIP'S CONFIGURATION CHANGE FORM — OPNAV 4790/CK

CONFIG FILE CORR | COMP. MA NO DEFL | Chg/Dr DEFL

SECTION I JOB IDENTIFICATION

JOB CONTROL NUMBER			ALTERATION IDENTIFICATION
1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. ALTERATIONS (SHIPALT, ORDALT, FLD. CHG, etc.)
05837	EM01	24599	

A. SHIP'S NAME	B. HULL NUMBER	C. EIC	D. ACT. TION
USS PUGET SOUND	AD 38	T801	1

E. EQUIPMENT NOUN NAME	F. S/F MHRS. EXP.	G. ACT. MAINT. TIME	H. COMP. DATE	I. MAR
FIRE PUMP MTR	0056	0023	4018	

SECTION II JOB DESCRIPTION/REMARKS

12. JOB DESCRIPTION/REMARKS: REPLACED DEFECTIVE MOTOR

SECTION III CONFIGURATION CHANGE IDENTIFICATION

13. COMPONENT NOUN NAME: MOTOR AC — 14. QUANTITY: 001 — 15. CA: R

16. COMPONENT IDENTIFICATION: 4 — 17. COMPONENT SERIAL NUMBER: NONE

18. COMPONENT APL/AEL: 1747513054 — 19. LOCATION (DECK/FRAME/SIDE): 6-117-0-E — 20. EIC: T801

21. NEXT HIGHER ASSEMBLY: FIRE MAIN SYSTEM — 21. SAC: 0 — 23. WORK CENTER: AANME M01

24. NAMEPLATE DATA

25. MIP: EL4/28-51 — 26. EOSS

27. TM: 092-LP-010-6010

SECTION IV. SPECIAL PURPOSE

28. RIN: A0102 — 29. AILSIN — 30. SECAS OFFICE USE

- INSTRUCTIONS -

ITEM NUMBER	SECTION I & II DESCRIPTION	SECTION I & II PAGE 1	SECTION I & II CONT PAGE
1-3	JOB CONTROL NUMBER	M	M
4	ALTERATION IDENTIFICATION	IP	IP
5	EQUIPMENT IDENTIFICATION	M	NR
6	ACTION TAKEN	M	NR
7	EQUIPMENT NOUN NAME	M	NR
8	SHIP'S FORCE MANHOURS	M	NR
9	ACTIVE MAINTENANCE TIME	M	NR
10	COMPLIETION DATE	M	NR
11	METER READING	IP	NR
12	JOB DESCRIPTION (REMARKS)	O	NR

ITEM NUMBER	SECTION III DESCRIPTION	REMOVE (R/D)	INSTALL (I/A)	MODIFY (M/C)
13	COMPONENT NOUN NAME	M	M	M
14	QUANTITY	M	M	M
15	COMPONENT ACTION	M	M	M
16	COMPONENT IDENTIFICATION	IP	IP	IP
17	COMPONENT SERIAL NUMBER	IA	IA	IA
18	COMPONENT APL/AEL	M	IA	IA
19	LOCATION	M	M	M
20	EQUIPMENT IDENTIFICATION CODE	NR	IA	NR
21	NEXT HIGHER ASSEMBLY	IP	IP	IP
22	SERVICE APPLICATION CODE	IA	IA	IA
23	WORK CENTER	NR	M	NR
24	NAMEPLATE DATA	NR	M	NR
25	MAINTENANCE INDEX PAGE	IA	IA	IA
26	EOSS	IP	IP	IP
27	TECHNICAL MANUAL NUMBER	IA	IA	IA

LEGEND

IA IF AVAILABLE — O OPTIONAL
IP IF APPLICABLE — NR NOT REQUIRED
M MANDATORY

SECTION I, BLOCK 6 ACTION TAKEN

5A - PARTIALLY COMPLETED ALTERATION
5B - FULLY COMPLETED ALTERATION
5C - FULLY COMPLETED EQUIVALENT TO ALTERATION
5D - ALTERATION DIRECTIVE NOT APPLICABLE
1 - MAINTENANCE ACTION COMPLETED: PARTS
2 - MAINTENANCE ACTION COMPLETED : REQUIRED PARTS NOT DRAWN FROM SUPPLY (LOCAL MANUFACTURE, PRE-EXPENDED BINS)
3 - MAINTENANCE ACTION COMPLETED: NO PARTS REQUIRED

SECTION III, BLOCK 15 COMPONENT ACTION

MAINTENANCE ACTIONS
R - REMOVED EQUIPMENT
I - INSTALLED EQUIPMENT
M - MODIFIED EQUIPMENT
CONFIG FILE CORR NO MAINTENANCE ACTION
A - ADDITION OF RECORD
D - DELETION OF RECORD
C - CORRECT/CHANGE EXISTING RECORD

WORK CENTER SUPERVISOR	DIVISION OFF	SUPPLY DEPT	3M COORDINATOR	SHIP SEQUENCE NUMBER	PAGE
ABC	NBC	WRC	MAL	69999	1 OF 2

Figure B-1: Ship's Configuration Change Form For Component Removal Maintenance Action

SHIP'S CONFIGURATION CHANGE FORM CONTINUATION PAGE OPNAV 4790/CK(C)
(REV 5-84) S/N 0107-LF-047-9010

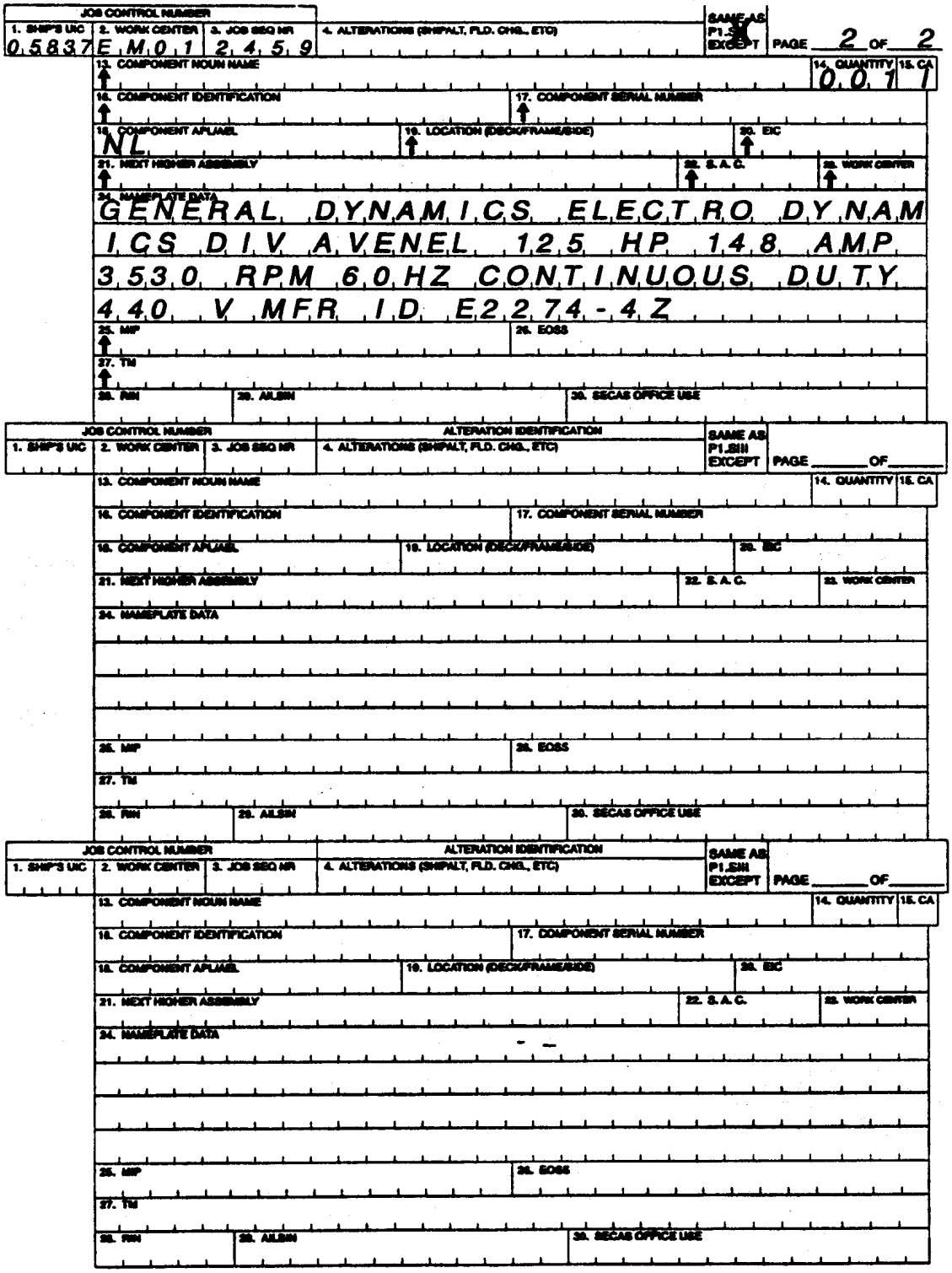


Figure B-2: Ship's Configuration Change Form For Component Install

SHIP'S CONFIGURATION CHANGE FORM — OPNAV 4790/CK

CONFIG FILE CORR | COMP. M/A NO DEFL | CHANGE DEFL

SECTION I JOB IDENTIFICATION

JOB CONTROL NUMBER			ALTERATION IDENTIFICATION
1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. ALTERATIONS (SHIPALT, ORDALT, FLD. CHG, etc.)
20012	EXSA	B6899	SALSD 28758 D

A. SHIP'S NAME	B. HULL NUMBER	C. ESC	D. ACT. TOY
USS PORTLAND	LSD 37	TF 03	5 B

5. EQUIPMENT NOUN NAME	6. S/F MHRS. EXP.	9. ACT. MAINT.	10. COMP. DATE	11. M/R
LP AIR COMPRESSR	0040	0TIME10	4030	

SECTION II JOB DESCRIPTION/REMARKS

12. JOB DESCRIPTION/REMARKS

REMOVED LP AIR COMPRESSOR PER SHIPALT DIRECTIVE

SECTION III CONFIGURATION CHANGE IDENTIFICATION

13. COMPONENT NOUN NAME	14. QUANTITY	15. CA
LP AIR COMPRESSOR	002	R

16. COMPONENT IDENTIFICATION	17. COMPONENT SERIAL NUMBER
1 AND 2	NONE

18. COMPONENT APL/AEL	19. LOCATION (DECK/FRAME/SIDE)	22. EIC
061900511	3-110-0	TF03

21. NEXT HIGHER ASSEMBLY	23. SAC	25. WORK CENTER
COMPRESSED AIR SYSTEM	0BACB	EM01

24. NAMEPLATE DATA

26. MIP	28. EOSS
A-004/003-A2	LPAC/000

27. TM: 9241-AB-MMO-010

SECTION IV. SPECIAL PURPOSE

29. RIN	29. AILSIN	30. SECAS OFFICE USE
B0510	55153	

- INSTRUCTIONS -

ITEM NUMBER	SECTION I & II DESCRIPTION	SECTION I & II PAGE 1	SECTION I & II CONT PAGE
1-3	JOB CONTROL NUMBER	M	M
4	ALTERATION IDENTIFICATION	IP	IP
5	EQUIPMENT IDENTIFICATION	M	NR
6	ACTION TAKEN	M	NR
7	EQUIPMENT NOUN NAME	M	NR
8	SHIP'S FORCE MANHOURS	M	NR
9	ACTIVE MAINTENANCE TIME	M	NR
10	COMPLETION DATE	M	NR
11	METER READING	IP	NR
12	JOB DESCRIPTION (REMARKS)	O	NR

ITEM NUMBER	SECTION III DESCRIPTION	REMOVE (R/D)	INSTALL (I/A)	MODIFY (M/C)
13	COMPONENT NOUN NAME	M	M	M
14	QUANTITY	M	M	M
15	COMPONENT ACTION	M	M	M
16	COMPONENT IDENTIFICATION	IP	IP	IP
17	COMPONENT SERIAL NUMBER	IA	IA	IA
18	COMPONENT APL/AEL	M	IA	IA
19	LOCATION	M	M	M
20	EQUIPMENT IDENTIFICATION CODE	NR	IA	NR
21	NEXT HIGHER ASSEMBLY	IP	IP	IP
22	SERVICE APPLICATION CODE	IA	IA	IA
23	WORK CENTER	NR	M	NR
24	NAMEPLATE DATA	NR	M	NR
25	MAINTENANCE INDEX PAGE	IA	IA	IA
26	EOSS	IP	IP	IP
27	TECHNICAL MANUAL NUMBER	IA	IA	IA

LEGEND

IA IF AVAILABLE — O OPTIONAL
IP IF APPLICABLE — NR NOT REQUIRED
M MANDATORY

SECTION I, BLOCK 6 ACTION TAKEN

5A - PARTIALLY COMPLETED ALTERATION
5B - FULLY COMPLETED ALTERATION
5C - FULLY COMPLETED EQUIVALENT TO ALTERATION
5D - ALTERATION DIRECTIVE NOT APPLICABLE
1 - MAINTENANCE ACTION COMPLETED: PARTS
2 - MAINTENANCE ACTION COMPLETED: REQUIRED PARTS NOT DRAWN FROM SUPPLY (LOCAL MANUFACTURE, PRE-EXPENDED BINS)
3 - MAINTENANCE ACTION COMPLETED: NO PARTS REQUIRED

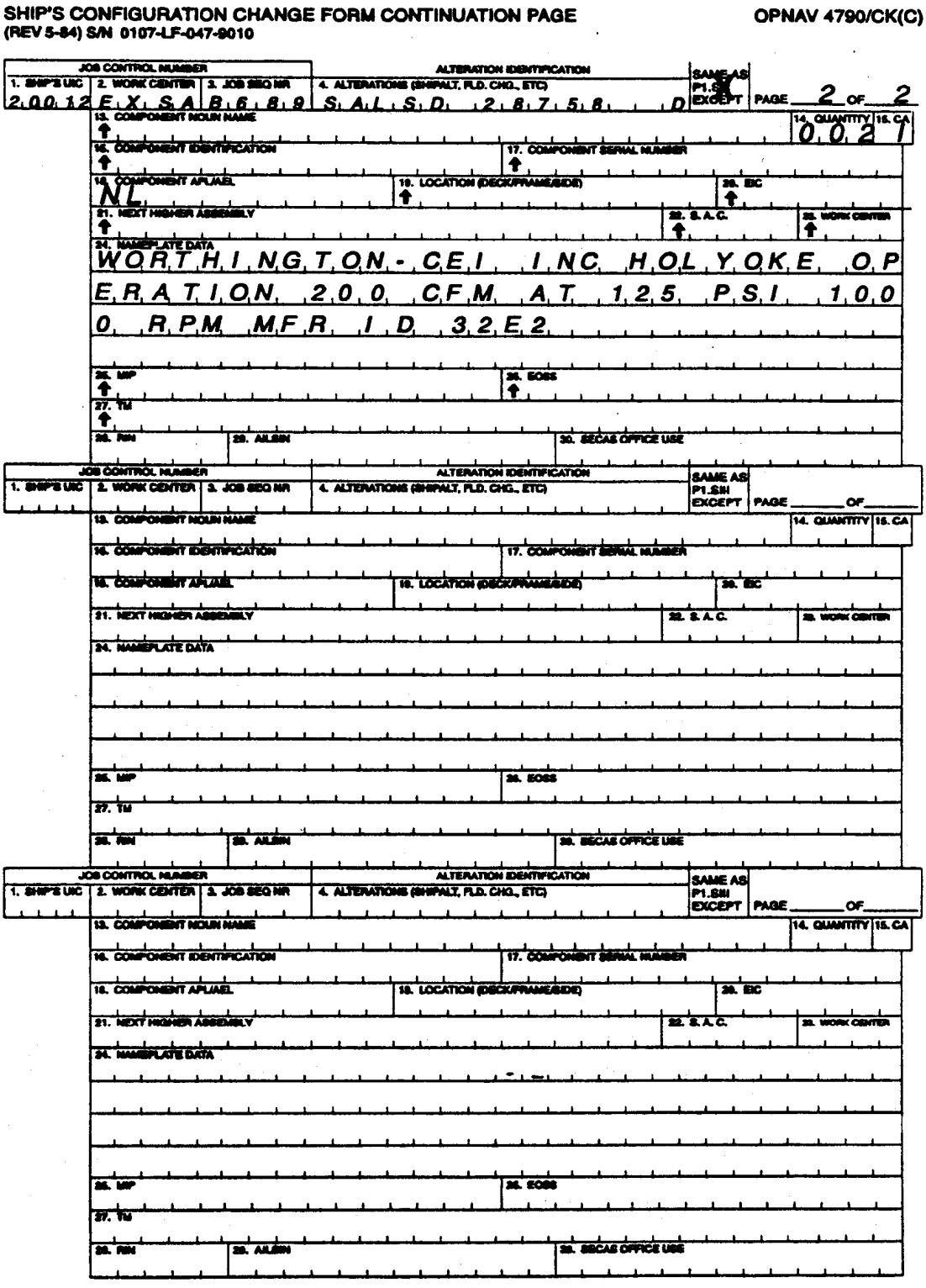
SECTION III, BLOCK 15 COMPONENT ACTION

MAINTENANCE ACTIONS
R - REMOVED EQUIPMENT
I - INSTALLED EQUIPMENT
M - MODIFIED EQUIPMENT

CONFIG FILE CORR NO MAINTENANCE ACTION
A - ADDITION OF RECORD
D - DELETION OF RECORD
C - CORRECT/CHANGE EXISTING RECORD

WORK CENTER SUPERVISOR	DIVISION OFF	SUPPLY DEPT	3M COORDINATOR	SHIP SEQUENCE NUMBER	PAGE
MJL	FTS	TJP	BFD	69999	1 OF 2

Figure B-3: Ship's Configuration Change Form Resulting From An Alteration



SHIP'S CONFIGURATION CHANGE FORM CONTINUATION PAGE
(REV 5-84) S/N 0107-LF-047-9010

OPNAV 4790/CK(C)

JOB CONTROL NUMBER
1. SHIP'S UIC: 2 0 0 1 2
2. WORK CENTER: E X S
3. JOB SEQ NR: A B 6 8 9
ALTERATION IDENTIFICATION
4. ALTERATIONS (SHIPALT, FLD. CHG., ETC): S A L S D 2 8 7 5 8 D
SAME AS P1.SIN EXCEPT: X
PAGE 2 OF 2

13. COMPONENT NOUN NAME
14. QUANTITY: 0 0 2
15. CA: 1
16. COMPONENT IDENTIFICATION
17. COMPONENT SERIAL NUMBER
18. COMPONENT APL/AEL: N L
19. LOCATION (DECK/FRAME/SIDE)
20. EIC
21. NEXT HIGHER ASSEMBLY
22. S. A. C.
23. WORK CENTER
24. NAMEPLATE DATA: W O R T H I N G T O N - C E I I N C H O L Y O K E O P E R A T I O N 2 0 0 C F M A T 1 2 5 P S I 1 0 0 0 R P M M F R I D 3 2 E 2
25. MIP
26. EOSS
27. TM
28. RIN
29. AIL/SIN
30. SECAS OFFICE USE

JOB CONTROL NUMBER
1. SHIP'S UIC
2. WORK CENTER
3. JOB SEQ NR
ALTERATION IDENTIFICATION
4. ALTERATIONS (SHIPALT, FLD. CHG., ETC)
SAME AS P1.SIN EXCEPT
PAGE _____ OF _____

13. COMPONENT NOUN NAME
14. QUANTITY
15. CA
16. COMPONENT IDENTIFICATION
17. COMPONENT SERIAL NUMBER
18. COMPONENT APL/AEL
19. LOCATION (DECK/FRAME/SIDE)
20. EIC
21. NEXT HIGHER ASSEMBLY
22. S. A. C.
23. WORK CENTER
24. NAMEPLATE DATA
25. MIP
26. EOSS
27. TM
28. RIN
29. AIL/SIN
30. SECAS OFFICE USE

JOB CONTROL NUMBER
1. SHIP'S UIC
2. WORK CENTER
3. JOB SEQ NR
ALTERATION IDENTIFICATION
4. ALTERATIONS (SHIPALT, FLD. CHG., ETC)
SAME AS P1.SIN EXCEPT
PAGE _____ OF _____

13. COMPONENT NOUN NAME
14. QUANTITY
15. CA
16. COMPONENT IDENTIFICATION
17. COMPONENT SERIAL NUMBER
18. COMPONENT APL/AEL
19. LOCATION (DECK/FRAME/SIDE)
20. EIC
21. NEXT HIGHER ASSEMBLY
22. S. A. C.
23. WORK CENTER
24. NAMEPLATE DATA
25. MIP
26. EOSS
27. TM
28. RIN
29. AIL/SIN
30. SECAS OFFICE USE

Figure B-4: Ship's Configuration Change Form For An Alteration Install (continuation)

CORRECTION

SHIP'S CONFIGURATION CHANGE FORM — OPNAV 4790/CK

CONFIG/FILE CORR | COMP. M/A NO DEFL | COMP DEFL

SECTION I JOB IDENTIFICATION

JOB CONTROL NUMBER			ALTERATION IDENTIFICATION
1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. ALTERATIONS (SHIPALT, OPNALT, FLD. CHG, etc.)
2 0 5 9 0	O C 0 1	1 2 3 4	

A. SHIP'S NAME	B. HULL NUMBER	5. EIC	6. ACT. TION
USS CARON	DD 970		

6. EQUIPMENT NOUN NAME	8. S/F MHRS. EXP.	9. ACT. MAINT. TIME	10. COMP. DATE	11. M/R

SECTION II JOB DESCRIPTION/REMARKS

12. JOB DESCRIPTION/REMARKS

SECTION III CONFIGURATION CHANGE IDENTIFICATION

13. COMPONENT NOUN NAME		14. QUANTITY	15. CA
AN/PRC-96		0 0 1	C
16. COMPONENT IDENTIFICATION	17. COMPONENT SERIAL NUMBER		
18. COMPONENT APL/AEL	19. LOCATION (DECK/FRAME/SIDE)	22. EIC	
5 6 6 1 9 8 9 6	1 - 1 4 - 0 - C	Q D 7 N	
21. NEXT HIGHER ASSEMBLY	21. SAC	23. WORK CENTER	
		O C 0 1	

24. NAMEPLATE DATA

25. MIP	26. EOSS

27. TM

SECTION IV. SPECIAL PURPOSE

28. RIN	29. AILSIN	30. SECAS OFFICE USE

- INSTRUCTIONS -

ITEM NUMBER	SECTION I & II DESCRIPTION	SECTION I & II PAGE 1	SECTION I & II CONT PAGE
1-3	JOB CONTROL NUMBER	M	M
4	ALTERATION IDENTIFICATION	IP	IP
5	EQUIPMENT IDENTIFICATION	M	NR
6	ACTION TAKEN	M	NR
7	EQUIPMENT NOUN NAME	M	NR
8	SHIP'S FORCE MANHOURS	M	NR
9	ACTIVE MAINTENANCE TIME	M	NR
10	COMPLETION DATE	M	NR
11	METER READING	IP	NR
12	JOB DESCRIPTION (REMARKS)	O	NR

ITEM NUMBER	SECTION III DESCRIPTION	REMOVE (R/D)	INSTALL (I/A)	MODIFY (M/C)
13	COMPONENT NOUN NAME	M	M	M
14	QUANTITY	M	M	M
15	COMPONENT ACTION	M	M	M
16	COMPONENT IDENTIFICATION	IP	IP	IP
17	COMPONENT SERIAL NUMBER	IA	IA	IA
18	COMPONENT APL/AEL	M	IA	IA
19	LOCATION	M	M	M
20	EQUIPMENT IDENTIFICATION CODE	NR	IA	NR
21	NEXT HIGHER ASSEMBLY	IP	IP	IP
22	SERVICE APPLICATION CODE	IA	IA	IA
23	WORK CENTER	NR	M	NR
24	NAMEPLATE DATA	NR	M	NR
25	MAINTENANCE INDEX PAGE	IA	IA	IA
26	EOSS	IP	IP	IP
27	TECHNICAL MANUAL NUMBER	IA	IA	IA

LEGEND

IA IF AVAILABLE — O OPTIONAL
IP IF APPLICABLE — NR NOT REQUIRED
M MANDATORY

SECTION I, BLOCK 6 ACTION TAKEN

5A - PARTIALLY COMPLETED ALTERATION
5B - FULLY COMPLETED ALTERATION
5C - FULLY COMPLETED EQUIVALENT TO ALTERATION
5D - ALTERATION DIRECTIVE NOT APPLICABLE
1 - MAINTENANCE ACTION COMPLETED: PARTS
2 - MAINTENANCE ACTION COMPLETED : REQUIRED PARTS NOT DRAWN FROM SUPPLY (LOCAL MANUFACTURE, PRE-EXPENDED BINS)
3 - MAINTENANCE ACTION COMPLETED: NO PARTS REQUIRED

SECTION III, BLOCK 15 COMPONENT ACTION

MAINTENANCE ACTIONS
R - REMOVED EQUIPMENT
I - INSTALLED EQUIPMENT
M - MODIFIED EQUIPMENT

CONFIG FILE CORR NO MAINTENANCE ACTION
A - ADDITION OF RECORD
D - DELETION OF RECORD
C - CORRECT/CHANGE EXISTING RECORD

WORK CENTER SUPERVISOR	DIVISION OFF	SUPPLY DEPT	SM COORDINATOR	SHIP SEQUENCE NUMBER	PAGE
LAT	BNO	LVC	BFD	6 9 9 9 9	1 OF 1

Figure B-5: Ship's Configuration Change Form For A Correction To A Previously Submitted Change

SHIP'S CONFIGURATION CHANGE FORM — OPNAV 4790/CK

CONFIG FILE CORR | COMP. M/A NO DEFL | COMP DEFL

SECTION I JOB IDENTIFICATION

JOB CONTROL NUMBER			ALTERATION IDENTIFICATION
1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. ALTERATIONS (SHIPALT, ORDALT, FLD. CHG, etc.)
20043	EM01	2334	

A. SHIP'S NAME	B. HULL NUMBER	5. EIC	6. ACT. TION
USS WILLIAM H. BATES	SSN 680		

5. EQUIPMENT NOUN NAME	8. S/F MHRS. EXP.	9. ACT. MAINT. TIME	10. COMP. DATE	11. M/R

SECTION II JOB DESCRIPTION/REMARKS

12. JOB DESCRIPTION/REMARKS: CORRECTION OF COSAL

SECTION III CONFIGURATION CHANGE IDENTIFICATION

13. COMPONENT NOUN NAME	14. QUANTITY	15. CA
MOTOR GENERATOR		C

16. COMPONENT IDENTIFICATION	17. COMPONENT SERIAL NUMBER

18. COMPONENT APL/AEL	19. LOCATION (DECK/FRAME/SIDE)	22. EIC
1818200444	ERUL	4703

21. NEXT HIGHER ASSEMBLY	21. SAC	23. WORK CENTER

24. NAMEPLATE DATA

25. MIP	26. EOSS

27. TM

SECTION IV. SPECIAL PURPOSE

28. RIN	29. AILSIN	30. SECAS OFFICE USE
A4754		

- INSTRUCTIONS -

ITEM NUMBER	SECTION I & II DESCRIPTION	SECTION I & II PAGE 1	SECTION I & II CONT PAGE
1-3	JOB CONTROL NUMBER	M	M
4	ALTERATION IDENTIFICATION	IP	IP
5	EQUIPMENT IDENTIFICATION	M	NR
6	ACTION TAKEN	M	NR
7	EQUIPMENT NOUN NAME	M	NR
8	SHIP'S FORCE MANHOURS	M	NR
9	ACTIVE MAINTENANCE TIME	M	NR
10	COMPLETION DATE	M	NR
11	METER READING	IP	NR
12	JOB DESCRIPTION (REMARKS)	O	NR

ITEM NUMBER	SECTION III DESCRIPTION	REMOVE (R/O)	INSTALL (I/A)	MODIFY (M/C)
13	COMPONENT NOUN NAME	M	M	M
14	QUANTITY	M	M	M
15	COMPONENT ACTION	M	M	M
16	COMPONENT IDENTIFICATION	IP	IP	IP
17	COMPONENT SERIAL NUMBER	IA	IA	IA
18	COMPONENT APL/AEL	M	IA	IA
19	LOCATION	M	M	M
20	EQUIPMENT IDENTIFICATION CODE	NR	IA	NR
21	NEXT HIGHER ASSEMBLY	IP	IP	IP
22	SERVICE APPLICATION CODE	IA	IA	IA
23	WORK CENTER	NR	M	NR
24	NAMEPLATE DATA	NR	M	NR
25	MAINTENANCE INDEX PAGE	IA	IA	IA
26	EOSS	IP	IP	IP
27	TECHNICAL MANUAL NUMBER	IA	IA	IA

LEGEND

IA IF AVAILABLE — O OPTIONAL
IP IF APPLICABLE — NR NOT REQUIRED
M MANDATORY

SECTION I, BLOCK 6 ACTION TAKEN

5A - PARTIALLY COMPLETED ALTERATION
5B - FULLY COMPLETED ALTERATION
5C - FULLY COMPLETED EQUIVALENT TO ALTERATION
5D - ALTERATION DIRECTIVE NOT APPLICABLE
1 - MAINTENANCE ACTION COMPLETED: PARTS
2 - MAINTENANCE ACTION COMPLETED : REQUIRED PARTS NOT DRAWN FROM SUPPLY (LOCAL MANUFACTURE, PRE-EXPENDED BINS)
3 - MAINTENANCE ACTION COMPLETED: NO PARTS REQUIRED

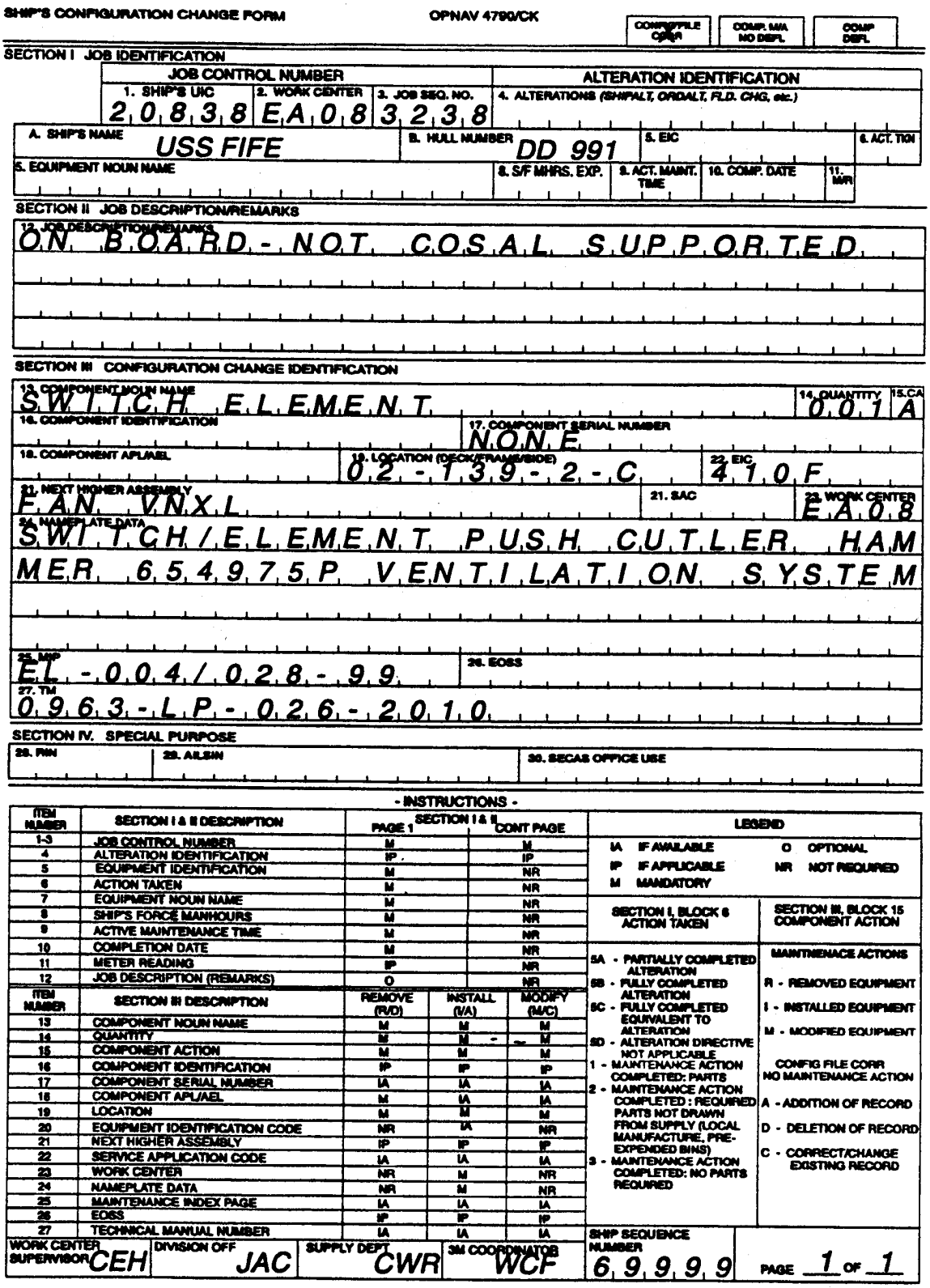
SECTION III, BLOCK 15 COMPONENT ACTION

MAINTENANCE ACTIONS
R - REMOVED EQUIPMENT
I - INSTALLED EQUIPMENT
M - MODIFIED EQUIPMENT

CONFIG FILE CORR NO MAINTENANCE ACTION
A - ADDITION OF RECORD
D - DELETION OF RECORD
C - CORRECT/CHANGE EXISTING RECORD

WORK CENTER SUPERVISOR	DIVISION OFF	SUPPLY DEPT	3M COORDINATOR	SHIP SEQUENCE NUMBER	PAGE
GHB	CLH	PWS	BBB	69999	1 OF 1

Figure B-6: Ship's Configuration Change Form For Location Correction



SHIP'S CONFIGURATION CHANGE FORM — OPNAV 4790/CK

SECTION I JOB IDENTIFICATION

JOB CONTROL NUMBER			ALTERATION IDENTIFICATION
1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. ALTERATIONS (SHIPALT, ORDALT, FLD. CHG, etc.)
20838	EA08	3238	

A. SHIP'S NAME	B. HULL NUMBER	5. EIC	6. ACT. TKN
USS FIFE	DD 991		

5. EQUIPMENT NOUN NAME	8. S/F MHRS. EXP.	9. ACT. MAINT. TIME	10. COMP. DATE	11. M/R

SECTION II JOB DESCRIPTION/REMARKS

12. JOB DESCRIPTION/REMARKS: ON BOARD - NOT COSAL SUPPORTED

SECTION III CONFIGURATION CHANGE IDENTIFICATION

13. COMPONENT NOUN NAME	14. QUANTITY	15. CA
SWITCH ELEMENT	001	A

16. COMPONENT IDENTIFICATION	17. COMPONENT SERIAL NUMBER
	NONE

18. COMPONENT APL/AEL	19. LOCATION (DECK/FRAME/SIDE)	22. EIC
	02-139-2-C	410F

20. NEXT HIGHER ASSEMBLY	21. SAC	23. WORK CENTER
FAN VNXL		EA08

24. NAMEPLATE DATA: SWITCH/ELEMENT PUSH CUTLER HAMMER 6549752 VENTILATION SYSTEM

25. MIP	26. EOSS
EL-004/028-99	

27. TM: 0963-LP-026-2010

SECTION IV. SPECIAL PURPOSE

28. PIIN	29. AIS/N	30. SECAS OFFICE USE

- INSTRUCTIONS -

ITEM NUMBER	SECTION I & II DESCRIPTION	SECTION I & II PAGE 1	SECTION I & II CONT PAGE
1-3	JOB CONTROL NUMBER	M	M
4	ALTERATION IDENTIFICATION	IP	IP
5	EQUIPMENT IDENTIFICATION	M	NR
6	ACTION TAKEN	M	NR
7	EQUIPMENT NOUN NAME	M	NR
8	SHIP'S FORCE MANHOURS	M	NR
9	ACTIVE MAINTENANCE TIME	M	NR
10	COMPLETION DATE	M	NR
11	METER READING	IP	NR
12	JOB DESCRIPTION (REMARKS)	O	NR

ITEM NUMBER	SECTION III DESCRIPTION	REMOVE (R/D)	INSTALL (I/A)	MODIFY (M/C)
13	COMPONENT NOUN NAME	M	M	M
14	QUANTITY	M	M	M
15	COMPONENT ACTION	M	M	M
16	COMPONENT IDENTIFICATION	IP	IP	IP
17	COMPONENT SERIAL NUMBER	IA	IA	IA
18	COMPONENT APL/AEL	M	IA	IA
19	LOCATION	M	M	M
20	EQUIPMENT IDENTIFICATION CODE	NR	IA	NR
21	NEXT HIGHER ASSEMBLY	IP	IP	IP
22	SERVICE APPLICATION CODE	IA	IA	IA
23	WORK CENTER	NR	M	NR
24	NAMEPLATE DATA	NR	M	NR
25	MAINTENANCE INDEX PAGE	IA	IA	IA
26	EOSS	IP	IP	IP
27	TECHNICAL MANUAL NUMBER	IA	IA	IA

LEGEND

IA IF AVAILABLE — O OPTIONAL
IP IF APPLICABLE — NR NOT REQUIRED
M MANDATORY

SECTION I, BLOCK 6 ACTION TAKEN

5A - PARTIALLY COMPLETED ALTERATION
5B - FULLY COMPLETED ALTERATION
5C - FULLY COMPLETED EQUIVALENT TO ALTERATION
5D - ALTERATION DIRECTIVE NOT APPLICABLE
1 - MAINTENANCE ACTION COMPLETED: PARTS
2 - MAINTENANCE ACTION COMPLETED : REQUIRED PARTS NOT DRAWN FROM SUPPLY (LOCAL MANUFACTURE, PRE-EXPENDED BINS)
3 - MAINTENANCE ACTION COMPLETED: NO PARTS REQUIRED

SECTION III, BLOCK 15 COMPONENT ACTION

MAINTENANCE ACTIONS
R - REMOVED EQUIPMENT
I - INSTALLED EQUIPMENT
M - MODIFIED EQUIPMENT

CONFIG FILE CORR NO MAINTENANCE ACTION
A - ADDITION OF RECORD
D - DELETION OF RECORD
C - CORRECT/CHANGE EXISTING RECORD

WORK CENTER SUPERVISOR	DIVISION OFF	SUPPLY DEPT	3M COORDINATOR	SHIP SEQUENCE NUMBER	PAGE
CEH	JAC	CWR	WCF	69999	1 OF 1

Figure B-7: Ship's Configuration Change Form for COSAL Add

SHIP'S CONFIGURATION CHANGE FORM — OPNAV 4790/CK — CONFIG FILE CORR — COMP. M/A NO DEFL — COMP DEFL

SECTION I JOB IDENTIFICATION

JOB CONTROL NUMBER			ALTERATION IDENTIFICATION
1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. ALTERATIONS (SHIPALT, ORDALT, FLD. CHG, etc.)
20590	EM01	2345	

A. SHIP'S NAME	B. HULL NUMBER	5. EIC	6. ACT. TION
USS CARON	DD 970		

5. EQUIPMENT NOUN NAME	8. S/F MHRS. EXP.	9. ACT. MAINT. TIME	10. COMP. DATE	11. M/R

SECTION II JOB DESCRIPTION/REMARKS

12. JOB DESCRIPTION/REMARKS: NOT ON BOARD - COSAL SUPPORTED

SECTION III CONFIGURATION CHANGE IDENTIFICATION

13. COMPONENT NOUN NAME		14. QUANTITY	15.CA
HEATER AIR CIRCULATOR		001	D
16. COMPONENT IDENTIFICATION	17. COMPONENT SERIAL NUMBER		
18. COMPONENT APL/AEL	19. LOCATION (DECK/FRAME/SIDE)	22. EIC	
070970028		T107	
21. NEXT HIGHER ASSEMBLY	21. SAC	23. WORK CENTER	

24. NAMEPLATE DATA: 440V

25. MIP	26. EOSS
EL-022/14-99	

27. TM: 0938-LP-050-2010

SECTION IV. SPECIAL PURPOSE

28. RIN	29. AILSIN	30. SECAS OFFICE USE
4327		

- INSTRUCTIONS -

ITEM NUMBER	SECTION I & II DESCRIPTION	SECTION I & II PAGE 1	SECTION I & II CONT PAGE
1-3	JOB CONTROL NUMBER	M	M
4	ALTERATION IDENTIFICATION	IP	IP
5	EQUIPMENT IDENTIFICATION	M	NR
6	ACTION TAKEN	M	NR
7	EQUIPMENT NOUN NAME	M	NR
8	SHIP'S FORCE MANHOURS	M	NR
9	ACTIVE MAINTENANCE TIME	M	NR
10	COMPLETION DATE	M	NR
11	METER READING	IP	NR
12	JOB DESCRIPTION (REMARKS)	O	NR

ITEM NUMBER	SECTION III DESCRIPTION	REMOVE (R/D)	INSTALL (I/A)	MODIFY (M/C)
13	COMPONENT NOUN NAME	M	M	M
14	QUANTITY	M	M	M
15	COMPONENT ACTION	M	M	M
16	COMPONENT IDENTIFICATION	IP	IP	IP
17	COMPONENT SERIAL NUMBER	IA	IA	IA
18	COMPONENT APL/AEL	M	IA	IA
19	LOCATION	M	M	M
20	EQUIPMENT IDENTIFICATION CODE	NR	IA	NR
21	NEXT HIGHER ASSEMBLY	IP	IP	IP
22	SERVICE APPLICATION CODE	IA	IA	IA
23	WORK CENTER	NR	M	NR
24	NAMEPLATE DATA	NR	M	NR
25	MAINTENANCE INDEX PAGE	IA	IA	IA
26	EOSS	IP	IP	IP
27	TECHNICAL MANUAL NUMBER	IA	IA	IA

LEGEND

IA IF AVAILABLE — O OPTIONAL
IP IF APPLICABLE — NR NOT REQUIRED
M MANDATORY

SECTION I, BLOCK 6 ACTION TAKEN

5A - PARTIALLY COMPLETED ALTERATION
5B - FULLY COMPLETED ALTERATION
5C - FULLY COMPLETED EQUIVALENT TO ALTERATION
5D - ALTERATION DIRECTIVE NOT APPLICABLE
1 - MAINTENANCE ACTION COMPLETED: PARTS
2 - MAINTENANCE ACTION COMPLETED : REQUIRED PARTS NOT DRAWN FROM SUPPLY (LOCAL MANUFACTURE, PRE-EXPENDED BINS)
3 - MAINTENANCE ACTION COMPLETED: NO PARTS REQUIRED

SECTION III, BLOCK 15 COMPONENT ACTION

MAINTENANCE ACTIONS
R - REMOVED EQUIPMENT
I - INSTALLED EQUIPMENT
M - MODIFIED EQUIPMENT

CONFIG FILE CORR NO MAINTENANCE ACTION
A - ADDITION OF RECORD
D - DELETION OF RECORD
C - CORRECT/CHANGE EXISTING RECORD

WORK CENTER SUPERVISOR	DIVISION OFF	SUPPLY DEPT	3M COORDINATOR	SHIP SEQUENCE NUMBER	PAGE
DEL	PSF	LEH	SAD	69999	1 OF 1

Figure B-8: Ship's Configuration Change Form for COSAL Delete

B-2 SHIP'S MAINTENANCE ACTION FORM (NAVSEA 4790/2K)

The NAVSEA 4790/2K Form is used for reporting deferred maintenance actions, and the completion of those maintenance actions that do not result in a configuration change. To report completion of a configuration change, refer to the instructions for using the NAVSEA 4790/CK Form.

An original and three copies of the NAVSEA 4790/2K Form are required for deferring a maintenance action. The originals and third copy are forwarded to the automated data processing facility serving the activity. The first and third copy is retained by the issuing activity. The first copy is submitted when reporting the completion of the maintenance action. The second copy is retained until completion of the maintenance action is reflected in the CSMP and then may be destroyed.

Two blocks at the top of the form are used to specify what type of maintenance action is being reported, a deferral "DEFL", or a completion "COMP". The rest of the form is separated into six sections. (A partially completed maintenance action which results in configuration changes, and complete, or partial accomplishment of an alteration should be reported on the NAVSEA 4790/CK Form). There are six sections:

a. SECTION I - IDENTIFICATION. This section is used to identify the equipment or system on which maintenance actions are being reported.

b. SECTION II - DEFERRAL ACTION. This section, filled in when reporting a deferral of a maintenance action, indicates ship's force man-hours expended up to the time of deferral, the date of deferral, ship's force man-hours remaining, and required completion date (if necessary).

c. SECTION III - COMPLETED ACTION. This section is filled in when reporting the completion of a maintenance action, and special reporting blocks used when reporting maintenance actions on selected equipment.

d. SECTION IV - REMARKS/DESCRIPTION. This section is filled in when reporting the deferral of a maintenance action. The type of information recorded includes remarks that describe what is wrong. What caused the failure or malfunction, maintenance to be performed, the names of personnel involved in the maintenance action, a priority and availability assignment

and Signatures by management personnel who screened the maintenance action.

e. SECTION V - SUPPLEMENTARY INFORMATION. This section issued by the reporting activity to provide necessary information pertaining to maintenance actions that are required or onboard (e.g., technical manuals, blueprints, etc.). This section is also used by the repair activity in planning, scheduling, and controlling the repair activity work.

f. SECTION VI - REPAIR ACTIVITY PLANNING/ACTION. This section is used by the repair activity for planning, estimating and scheduling purposes, and can be used to report work accomplishment by an internal department work center or by an external activity not under an ADP system.

NOTE:

Examples of completed NAVSEA 4790/2K forms for various reporting situations can be found following these written instructions.

B-2.1 Procedures for Documenting A Deferred Maintenance Action

Place an "X" in the block titled "DEFL" at top of form.

B-2.1.1 Section I - Identification

Block A Enter SHIP'S NAME

Block B Enter SHIP'S HULL NUMBER

JOB CONTROL NUMBER (Blocks 1 - 3):

Block 1 SHIP'S UIC: Enter the UIC of the activity initiating the maintenance action.

Block 2 WORK CENTER: Enter the Work Center code of the work center initiating the maintenance action. For ships, a four-position work center code will be entered. For repair departments of tenders, SIMAs, RMC’s, and other IMAs, a three-digit code has been assigned. The three -digit codes are entered left-to-right leaving the right most position blank.

Block 3 JOB SEQ. NO.: Enter the character job sequence number assigned by the work center supervisor. This

is an entry assigned sequentially from the SFWL/JSN Log.

Block 4 APL/AEL (Allowance Parts List/Allowance Equipment List): Enter the APL/AEL of the equipment being reported. These numbers are found in the COSAL or SCLSIS Index Report. An example of an APL would be "882170236" and an AEL would be "2-260034096."

Block 5 EQUIPMENT NOUN NAME: Enter the equipment nomenclature/description on which maintenance is being reported. The equipment nomenclature/ description should be the same as that identified by the Equipment Identification Code (EIC) and is limited to 16 positions. Standard abbreviations can be used if clarity is retained. For electronic equipment's having an Army-Navy (AN) designation, it will be substituted for the equipment nomenclature.

Block 6 WHEN DISCOVERED (WND): Enter the code that best identifies when the need for maintenance was discovered.

Code	Description
1	Lighting Off or Starting
2	Normal Operation
3	During Operability Tests
4	During Inspection
5	Shifting Operational Modes
6	During PMS
7	Securing
8	During AEC (Assessment of Equipment) Program
9	No failure, PMS Accomplishment Only
0	Not Applicable (use when reporting printing services, etc.)

Block 7 STATUS (STA): Enter the code that most accurately describes the effect of the failure or malfunction on the operational performance capability of the equipment when the need for maintenance was first discovered.

Code	Description
1	Operational
2	Non-Operational

Code	Description
3	Reduced Capability
0	Not Applicable (use if reporting printing services, etc.)

Block 8 CAUSE (CAS): Enter the code that best describes the cause of the failure or malfunction when the need for maintenance was first discovered. (Refer to Appendix A, data element "CAUSE" for an expanded definition of the allowable codes/values).

Code	Description
1	Abnormal Environment
2	Manufacturer/Installation Defects
3	Lack of Knowledge or Skill
4	Communications Problem
5	Inadequate Instruction/Procedure
6	Inadequate Design
7	Normal Wear and Tear
0	Other or No Malfunction

Block 9 DEFERRAL REASON (DFR): Enter the deferral reason code which best describes the reason the maintenance cannot be done at the time of deferral. (Refer to Appendix A, data element "DEFERRAL REASON" for an expanded definition of the allowable codes/values).

Code	Deferral Reason
1	Due to Ship's Force Work Backlog/Operational Priority
2	Lack of Material
3	No Formal Training on this Equipment
4	Formal Training Inadequate for this Equipment
5	Inadequate School Practical Training
6	Lack of Facilities/Capabilities
7	Not Authorized for Ship's Force Accomplishment
8	For Ship's Force Overhaul or Availability Work List
9	Lack of Technical Documentation
0	Other - or Not Applicable

Block 10 This Block is reserved for TYCOM directed applications. Refer to TYCOM instruction for use.

Block 11 This Block is reserved for TYCOM directed applications. Refer to TYCOM instruction for use.

Block 12 This Block is reserved for TYCOM directed applications. Refer to TYCOM instruction for use.

Block 13 IDENT./EQUIPMENT SERIAL NUMBER: Enter the identification or serial number of the equipment or system on which maintenance is being deferred. For HM&E equipment, enter the Valve Mark/Electric Symbol Number (ESN) or Primary Identification Number. For electronic equipment, enter the manufacturer's serial number of the equipment or system on which maintenance is being deferred.

Block 14 EIC: Enter the Equipment Identification Code of the component, equipment, subsystem, or system for which the maintenance is being reported.

Block 15 SAFETY HAZARD: Enter an "X" or applicable safety code if the maintenance action describes a problem or condition which has caused, or has the potential to cause serious injury to personnel or material. A brief explanation must be included in the Remarks/Description field (Block 35). For example: "RE-INSPECTION OF SEPARATOR FOR PRESENCE OF OIL AFTER RINSE. MRC A-27 EVIDENTLY NOT DONE. PRESENCE OF OIL RESULTED IN FIRE IN HP AIR SYSTEM WHEN COMPRESSOR OPERATED UNDER LOAD. FIRE BADLY BURNED VALVE AHP-287, REQUIRING REPLACEMENT."

The ship's 3-M system coordinator will forward a copy of all NAVSEA 4790/2K documentation having an entry in this field to the safety officer for review.

(Refer to Appendix A, data element "SAFETY HAZARD" for an expanded definition of the allowable codes/values).

Code	Description
1	Critical Safety or Health Deficiency-Correct Immediately
2	Serious Safety or Health Deficiency-Suspension of Equipment/System/Space Use is Required

Code	Description
3	Moderate Safety or Health Deficiency-Waiver of Equipment/System/Space Use is granted Pending Correction of the Item
4	Minor Safety or Health Deficiency
5	Negligible Safety or Health Deficiency
0	Maintenance Action is Not Safety Related

NOTE:

Codes "6" through "9" may be locally assigned by TYCOMs for additional safety codes required.

Block 16 LOCATION: Enter the location (compartment number, deck, frame, or side notation), that best describes the location of the equipment requiring maintenance as identified in Block 13. If none of the above mentioned location identifications are appropriate, enter description of the location (e.g., FANTAIL, FLIGHT DECK, etc.).

Block 17 WHEN DISCOVERED DATE: Enter the Julian date when the equipment or system failure or malfunction was discovered.

Block 18 ALTERATIONS (SHIPALT, ORDALT, Fld. Chg., etc.): If reporting the deferral of a an alteration:

SHIPALT. Enter the alteration identification exactly as it appears on the Ship Alteration (SHIPALT) Record. Record the alteration type "SA" in the first two positions, ship type starting in position three, and the alteration number starting in the 7th position of the block (i.e., SASSBNf342130). Enter the title code from the alteration record in the last right-hand position of the block.

OTHER Alteration Types. Enter the alteration type character code in the first two positions of the block. Leave the third position blank and enter the alteration number starting in position four (i.e., OA f96999, FC 29, TY 0132).

If an alteration identification number is not provided with the alteration record, leave blank.

Following are the authorized alteration prefix codes:

SA	=	SHIP ALTERATION
OA	=	ORDNANCE ALTERATION
BA	=	BOAT ALTERATION
FC	=	FIELD CHANGE
MA	=	MACHINERY ALTERATION
SI	=	SYSCOM COMMAND INSTRUCTION
EC	=	ENGINEERING CHANGE
HI	=	HABITABILITY
TY	=	TYCOM DIRECTION
TD	=	TECHNICAL DIRECTIVE
SP	=	STRATEGIC SYSTEMS PROJECT OFFICE ALTERATION
SC	=	SERVICE CHANGE
TR	=	TRIDENT ALTERATION
EP	=	ENGINEERING CHANGE PROPOSAL
MO	=	CRYPTO EQUIPMENT MODIFICATION
AR	=	ALTERATION REQUEST. May be originated by a ship to request an alteration design. Enter and left-justify the authorized prefix "AR" followed by a blank space any number the ship assigns for its own control.

Blocks 19 through 24 - FOR INSURV USE - no entries required. See Section 2 of the Manual for specifications.

B-2.1.2 Section II - Deferral Action

Block 25 SHIP'S FORCE MAN-HOURS EXPENDED (S/F MHRS. EXP.): Enter the total man-hours (to the nearest whole hour) expended by personnel of all work centers involved in the maintenance action up to the time of deferral (include documentation time which should not exceed 1 hour).

Block 26 DEFER. DATE: Enter the Julian date when the maintenance action was deferred. An example of a deferral on 11 January 1994 would be: "4f11".

Block 27 SHIP'S FORCE MAN-HOURS REMAINING (S/F MHRS. REM.): Enter the estimated number of ship's force man-hours remaining to complete the maintenance action. Round off to the nearest whole hour. If the TYCOM allows an automated close out of the deferral by the IMA,

the letters "AUTO" will be entered. This is a request to the IMA to complete the maintenance action with no further documentation from the shop after the job has been accepted by the originator (authorized signature). If the originating ship does not receive CSMP support from the IMA doing the work, do not use the "AUTO" close out feature.

Block 28 DEADLINE DATE: This is an optional entry. The originator of the deferred action may enter the latest possible Julian date that outside assistance and ship's force work must be completed.

B-2.1.3 Section III - Completed Action

Blocks 29 through 33 - USED FOR REPORTING THE COMPLETION OF A MAINTENANCE ACTION

Block 34 METER READING: If the equipment has a time meter and is on the SEL, the reading (to the nearest whole hour) at the time of failure is entered in this block. If the equipment has more than one meter, designate the meter being recorded in Block 35 "REMARKS" using the letters "METRED" followed by the meter designator. An asterisk (*) must precede and follow the meter designation. Example: *METRED-1A2M1*.

B-2.1.4 Section IV - Remarks/Description

Block 35 REMARKS/DESCRIPTION: Enter remarks relating to the maintenance action. These remarks should be brief, but complete and meaningful. Remarks should state what is wrong, and what caused the failure (if known); and what must be done to correct the problem. Separate the two statements with "XXX". For example, "HIGH PITCHED SQUEAL OF PUMP SHAFT, GAUGE READING ABOVE RED LINE ON #2 PUMP, SSG CASING IS EXTREMELY HOTXXXINVESTIGATE AND REPAIR AS NECESSARY." If more space is needed, check Block 36 "CONT. SHEET" and continue the remarks on a second form using the same JCN. Include the statement "2L USED" if the supplemental OPNAV/2L form is used for drawings or other supplemental information.

NOTE:

The remarks should not include statements explaining what has been coded in another place of the form; i.e., "DEFERRAL REASON 2 = LACK OF MATERIAL".

Block 36 CONT. SHEET: Enter an "X" in this block if the "REMARKS" are continued on additional 2K forms. No more than three additional NAVSEA 4790/2K forms can be used.

B-2.2 Procedures for Using NAVSEA 4790/2K Continuation Pages

On each additional 2K form used for the continuation of "REMARKS" (no more than three additional NAVSEA 4790/2K forms can be used), enter the JCN of the first form and continue with the remarks in Section IV. In the top margin of each continuation page, insert the words "Page 2", "Page 3", etc….

Block 37 CSMP SUMMARY: Enter a condensed description of the problem. The work center supervisor is to ensure the summary succinctly captures the meaning of the REMARKS/DESCRIPTION (Block 35) narrative. The CSMP summary conveys to management the significance of the JCN (maintenance action). The CSMP summary is displayed on management reports, as opposed to the entire narrative of the REMARKS block.

Block 38 FIRST CONTACT/MAINT. MAN: Printed name of the senior person knowledgeable in the specifics of the JCN (maintenance action).

Block 39 RATE: Enter the rate of the first contact/maintenance person. Examples are:

Rank/Rate Code	Entry
Officers	OFF
ET1	ET1
Civilian	CIV
GMG2	GMG2
FTGSN	FTGN
EMFN	EMFN
FN	FN

Block 40 SECOND CONTACT/SUPERVISOR: Initialed by the supervisor of the first contact/maintenance person

after screening the maintenance action for completeness and accuracy.

Block 41 PRI: Enter the appropriate priority code. Refer to Appendix A for an expanded definition of the allowable codes/values.)

Code	Description
1	Mandatory
2	Essential
3	Highly Desirable
4	Desirable

Block 42 T/A: Enter the type availability (T/A) code for the type availability recommended for performance of the deferral.

Code	Description
1	Depot (shipyard or ship repair facility)
2	Intermediate Maintenance Activity (tender, repair ship, etc.)
3	TYCOM Support Unit (floating dry dock, etc., or technical assistance from NAVSEACOMBATSYSENGSTA or FTSCPAC/FTSCLANT or contractor representative)
4	Ship's Force
0	Not Applicable

Block 43 INTEGRATED PRIORITY: If the maintenance is to be done by an outside activity, the ship's engineer may rank departmental deferrals by integrated priority. A sequential number may be placed in this block to indicate its priority relative to other deferred work for a given availability.

Block C DIV. INIT: Initialed by the division officer after screening the document.

Block D DEPT. INIT: Initialed by the department head after screening the document.

Block E COMMANDING OFFICER'S SIGNATURE: Required on all deferrals for outside assistance, the commanding officer or authorized representative must sign the deferral.

Block F TYCOM AUTHORIZATION: This block is reserved for the signature of the TYCOM representative screening the deferral. This is usually applicable when direct routing from ship to TYCOM for deport emergent work is employed.

Blocks 44 through 46 are not completed at the time of deferral. Entries are made by the next level of management after leaving the ship (IUC and TYCOM during the screening process).

B-2.2.1 Section V - Supplementary Information

Block 47 BLUEPRINTS, TECH. MANUALS, PLANS, ETC…: Enter any TMs, blueprints, etc…, which might be of use to a repair activity providing assistance. Indicate with an "X" in the "AVAILABLE ON BOARD" – "YES/NO" block if the TM is onboard or not.

B-2.3 Procedures for Documenting Internal Work Requests

When it is necessary to obtain assistance from other departments within the organizational level of the ship, the NAVSEA 4790/2K Form can be used as an internal work request. If more than a single assisting work center is required, multiple copies will be prepared using the same JCN on each request.

The requesting work center prepares the number of copies required for internal control. The words "INTERNAL WORK REQUEST" is written at the top of each copy to be sent to the assisting work center(s). The following blocks are used:

B-2.3.1 Section I – Identification

Document all of this section. See "PROCEDURES FOR DOCUMENTING A DEFERRED MAINTENANCE ACTION"

B-2.3.2 Section IV - Remarks/Description

Block 35 REMARKS/DESCRIPTION: Describe the tasks required of the assisting work Center (AWC).

B-2.3.3 Section VI - Repair Activity Planning/Action

Block 49 REPAIR WORK CENTER (W/C): Enter the assisting work center's code.

Block 55 REPAIR ACTIVITY UIC: Enter the organization unit's Unit Identification Code (UIC). This will be the

same as Block 1 except when the ship is being assisted by a non-reporting outside activity, and the outside activity's UIC will be entered.

Block 56 WORK REQ. ROUTINE: Enter the appropriate Expanded Ship Work Breakdown Structure (ESWBS), Ship Work Authorization Boundary (SWAB), Ship Work Line Item Number (SWLIN), etc., as directed by the TYCOM.

B-2.4 Procedures for Documenting Screening Information On Deferred Maintenance Actions

Used by other activities, such as, IUCs, TYCOM representatives, and IMAs for screening, planning, and scheduling.

B-2.4.1 Section IV - Remarks/Description

Block F TYCOM AUTHORIZATION: This block is reserved for the signature of the TYCOM representative screening the deferral.

Block 44 IUC: The IUC or designated representative screening the deferral enters the recommendation as to the action to be taken. See the allowable codes following Block 45 (TYCOM) below.

Block 45 TYCOM: The TYCOM or designated representative screening the deferral will enter the action to be taken.

Code	Description
1	Depot (shipyard or ship repair facility) Accomplish
1A	Depot Assisted by Ship's Force
1S	Ship to Shop
1M	Accomplish with Modification
2	Intermediate Maintenance Activity (IMA) (tender/repair ship, etc.) Accomplish
2A	IMA Assisted by Ship's Force
2S	Ship to Shop
2M	Accomplish with Modification
3	TYCOM Support Unit (TSU) (floating dry dock, etc.) Accomplish or Technical Assistance from NAVUNDERSEAWARCENDET/FTSCPAC/FTSCLANT Contractor Representative
3A	TSU Assisted by Ship's Force
3S	Ship to Shop

Code	Description
3M	Accomplish with Modification
4	Ship's Force Accomplish
5	Deferred
5A	Insufficient Time in the Availability to Complete the Task
5B	Lack of Shipyard Capability
5C	Lack of Material
5D	Lack of Funds
5E	Not Required During this Availability
5F	General
6	Not Authorized
6A	Not Technically Justified
6B	Covered by an Existing Ship Alteration
6C	Duplicate of Another Job Control Number (JCN)
6D	Not Cost Effective
6E	General
8*	Disapproved
9**	Remove from Current Ship's Maintenance Project (CSMP). Pass to history (to be assigned by TYCOM only)

NOTE:

* This screening code disapproves the accomplishment of a work item by an outside activity. It does not prevent entry of the deferral into the CSMP, which is the decision of the commanding officer.

NOTE:

** This screening code is restricted to the removal of INSURV items from the CSMP for which, in the opinion of the ship's IUC and TYCOM, the ship has no responsibility for accomplishment.

NOTE:

The first character of the IUC and/or TYCOM screening code should be entered in the appropriate field. The second character, when used, should be entered in the space just below it.

Block 46 (A-L) SPECIAL PURPOSE: Use of these codes indicates the quality control and quality assurance standards are required. Refer to TYCOM instructions for additional information relative to these blocks

Enter the code in the designated block 46A through 46L to show quality control and/or quality assurance requirements.

Block 46A The department head will enter the KEY EVENT code from the ISIC provided Key Event Schedule. (Refer to Maintenance Manual Volume III Section 7.)

Block 46B Enter the code "SS" if the job requires work within SUBSAFE boundaries or involves SUBSAFE materials. (Refer to COMSUBLANT/COMSUBPACINST 4855.2.)

Block 46C Enter the code "L1" if the job requires work within Level I boundaries or involves Level I material. (Refer to COMSUBLANT/COMSUBPACINST 4855.2.)

Block 46D Enter the code "08" if the job is associated with nuclear equipment. Refer to NAVSEAINST 9210.4A (NOTAL)).

Block 46E Enter the code "RC" if the job requires radiological controls (RADCON). (Refer to NAVSEA 389-0153.)

Block 46F Enter the code "DD" if the job requires drydocking to accomplish.

Block 46G Enter the code "NC" for critical noise deficiencies or "NP" for potential radiated noise deficiencies.

Block 46H Reserved for future use.

Block 46I Reserved for future use.

Block 46J Reserved for future use.

Block 46K Reserved for future use.

Block 46L Enter the code assigned to the visiting activity. This will identify the visiting activity as the originator of the deferral.

B-2.4.2 Section V - Supplementary Information

Block 47 BLUEPRINTS, TECHNICAL MANUALS, PLANS, ETC: The repair activity can use this block during the work request planning in much the same manner as the originator. Information that might be of use in the accomplishment of the maintenance can be entered (e.g., TMs, blueprints, etc.).

Block 48 PREARRIVAL/ARRIVAL CONFERENCE ACTION/REMARKS: The repair activity may enter any remarks considered necessary to facilitate repairs.

B-2.4.3 Section VI - Repair Activity Planning/Action

Block 49 REPAIR W/C: Enter the character code of the lead work center assigned to the job. Refer to Appendix A data element "IMA REPAIR WORK CENTER" for a listing of IMA work center codes.

Block 50 EST. MHRS.: Enter the total number of estimated man-hours required by the lead work center to complete the job.

Block 51 ASST. REPAIR W/C: Enter the three or four character code of the first work center assigned to assist the lead work center on the job being planned. If more than one assist work center is required, check Block 36 to indicate a continuation page is being used. On the continuation page (new 2K form), fill in Blocks 1, 2, 3 with the same JCN of the original 2K. In Block 51, enter the second assist repair work center's code. No more than two assist work centers (two supplemental 2K forms) can be submitted.

Block 52 ASST. EST. MHRS: Enter the total number of estimated man-hours required by the assist work center to complete its portion of the job.

Block 53 SCHED. START DATE: Enter the Julian date that the work on the job is to begin.

Block 54 SCHED. COMP. DATE: Enter the Julian date that all work on the job is scheduled to be completed by the repair activity.

Block 55 REPAIR ACTIVITY UIC: Enter the unit identification code of the repair activity performing the work for the originating ship.

Block 56 WORK REQ. ROUTINE: Enter the appropriate Expanded Ship Work Breakdown Structure (ESWBS), Ship Work Authorization Boundary (SWAB), Ship Work Line Item Number (SWLIN), etc., as directed by the TYCOM.

Blocks 57 through 63 - Used to identify depot estimates on individual CSMP items from the Master Job Catalog. These blocks may also be used as directed by TYCOM instruction.

Block 58 EST.: Enter the total material costs estimated to be required to complete the job.

Block 59 EST. MATERIAL COSTS: Enter an estimate of the total material costs required to complete the job.

Block 60 EST. TOTAL COST: Enter an estimate of the total cost required to complete the job. (Add Blocks 58 and 59.)

Block 61 JOB ORDER NUMBER: Enter Job order number assigned by the activity performing the work.

Block 62 LEAD P&E CODE: Enter the code assigned to the lead planning and scheduling organization.

Block 63 DATE OF EST.: Enter the date that the repair activity's planning action was completed.

B-2.5 Procedures for Documenting A Completed Maintenance Action Previously Deferred

Blocks A, B, and applicable Blocks 1 through 47 have previously been filled.

The maintenance person shall report completion of a previously deferred maintenance action by using the copy of the NAVSEA 4790/2K retained onboard when the maintenance action was deferred. If there is no record (paper) copy of the original 2K, and the maintenance action is on the CSMP, enter the JCN on

a blank 2K form, and without providing all the deferred maintenance information, enter the completion data in Section III. If the word "AUTO" has been entered in Block 27 as directed by the TYCOM, submission of a completed maintenance action by the originating ship may not be necessary.

B-2.5.1 Section III - Completed Action

Block 29 ACT. TKN: Enter the code that best describes the action taken to complete the maintenance.

Code	Description
1	Maintenance Action Completed; Parts Drawn from Supply
2	Maintenance Action Completed; Required Parts Not Drawn from Supply (local manufacture, pre-expended bins, etc.)
3	Maintenance Action Completed; No Parts Required

NOTE:

The following second character codes can be used with the above Action Taken codes 1, 2, or 3 as directed by the TYCOM:

A	Maintenance Requirement Could Have Been Deferred
B	Maintenance Requirement Was Necessary
C	Maintenance Requirement Should Have Been Done Sooner
M	High Cost Repairs
T	The Equipment Being Reported Had a Time Meter

Code	Description
4	Canceled (When this code is used, the deferral will be removed from the CSMP. This code is not to be used with INSURV, safety, or priority 1 or 2 deferrals screened for accomplishment by the TYCOM or IUC.)
7	Maintenance Action Completed; 2-M (Miniature/Microminiature Electronic Modules) Capability Utilized.

NOTE:

The following second character codes can be used with Action Taken Code 7 to better describe the action taken:

A	Parts Drawn from Supply Utilized
B	Parts Not Drawn from Supply Utilized
C	Automatic Test Equipment (ATE) Utilized
D	ATE and Parts Drawn from Supply Utilized
E	ATE and Parts Not Drawn from Supply Utilized

Code	Description
8	Periodic Time Meter/Cycle Counter reporting. (This code is not applicable to the "FINAL ACTION" code reported by the repair activity.)
9	Maintenance Action Completed; 3M Fiber Optic Repair

NOTE:

The following second character codes can be used with Action Taken Code 9 to better describe the action taken:

A	FOTE, multimode ST MQJs utilized
B	FOTE, multimode heavy duty MQJs utilized
C	FOTE, multimode rotary mechanical splice MQJs utilized
D	FOTE, single mode ST MQJs utilized
E	FOTE, single mode heavy duty MQJs utilized
F	FOTE, multimode specialty MQJs utilized
G	FOTE, single mode specialty MQJs utilized
H	FOTE, not available
I	Standard MQJs not available
J	Specialty MQJs not available

Code	Description
0	None of the Above

Block 30 S/F MHRS: Enter the total man-hours (to the nearest whole hour) that ship's force expended doing the maintenance after submitting the deferral. This includes witnessing of tests, and those man-hours expended in reinstallation, test, documentation (not to exceed 1 hour), etc.

Block 31 COMPLETION DATE: Enter the Julian date the maintenance action was completed.

Block 32 ACT. MAINT. TIME: Enter the total clock hours (to the nearest whole hour) during which ship force

maintenance was actually performed. This should include time for troubleshooting, but not delays.

Block 33 TI: Enter a single numeral (1 through 9) to indicate, to the nearest 10%, the percentage of active maintenance expended in troubleshooting. For example, if no troubleshooting is involved, enter "f", "2" for 20%, "3" for 30%, "7" for 70%, etc.

Block 34 METER READING: There is no entry required on the completed deferral action. (Refer to Block 34 instructions for DOCUMENTING A DEFERRED MAINTENANCE ACTION above.)

Block 35 REMARKS/DESCRIPTION: When the "what must be done" statement on the original deferral accurately describes the work which was done, no further entries are required. If remarks in addition to the original remarks entered are needed to describe the work done, draw a line through all the previous remarks and starting on the next line, describe what was done, and any additional information considered significant. If additional space is needed for the completed action description, use up to three continuation pages.

B-2.5.2 Section IV - Remarks/Description

(Used by the Repair Activity when Reporting a Completed Maintenance Action). This type of completed work request is to be provided to the ship for 3-M processing.

Block 64 FINAL ACT.: Enter the code that best describes the final action taken to complete the maintenance. (Refer to Block 29 above for "ACTION TAKEN" allowable codes/values). In addition, the following codes can be used:

- 5A Partially Completed Alteration
- 5B Fully Completed Alteration
- 5C Fully Completed Equivalent to Alteration
- 5D Alteration Directive Not Applicable
- 6 Rejected Work Request (add suffix below for reason)
  - A Ship's Force/Standard Stock Item
  - B Excessive Shop Workload/Insufficient Availability

C Lack of Skills
D Lack of Facilities
E Lack of Test or Calibration Equipment
F Lack of Parts/Material
G Lack of Documentation
H Lack of Funds
I Other (record the explanation in "Remarks")

Block 65 MHRS. EXPENDED: Enter the man-hours expended on the last day the repair work center is involved in the work Request (NOT the total man-hours of the work request).

Block 66 DATE COMPLETED: Enter the Julian date the work request is completed and signed off by the requesting ship.

Block G COMPLETED BY: The signature and rank/rate of the individual authorized by the tended ship to verify the acceptability of work performed is entered in this block.

Block H ACCEPTED BY: The signature and rank or rate of the individual authorized by the tended ship to verify the acceptability of work performed. Completion of this block is mandatory when a 2K is used to report completion of a previously deferred maintenance action.

B-2.6 Procedures for Documenting A Completed Maintenance Action without prior deferral

Place an "X" in the block titled "COMP" at top of form.

B-2.6.1 Section I - Identification

Block A Enter SHIP'S NAME

Block B Enter SHIP'S HULL NUMBER

JOB CONTROL NUMBER (Blocks 1 - 3):

Block 1 SHIP'S UIC: Enter the UIC of the activity initiating the maintenance action.

Block 2 WORK CENTER: Enter the Work Center code of the work center initiating the maintenance action. For

Ship's, a four position work center code will be entered. For repair departments of tenders, SIMAs, RMC's, and other IMAs, a digit code has been assigned. The digit code is entered left-to-right leaving the right most position blank.

Block 3 JOB SEQ. NO.: Enter the character job sequence number assigned by the work center supervisor. This is an entry assigned sequentially from the SFWL/JSN Log.

Block 4 APL/AEL (Allowance Parts List/Allowance Equipment List): Enter the APL/AEL of the equipment being reported. These numbers are found in the COSAL or SCLSIS Index Report. An example of an APL would be "882170236" and an AEL would be "2-260034096."

Block 5 EQUIPMENT NOUN NAME: Enter the equipment nomenclature / description on which maintenance is being reported. The equipment nomenclature/description should be the same as that identified by the Equipment Identification Code (EIC) and is limited to 16 positions. Standard abbreviations can be used if clarity is retained. For electronic equipment having an Army-Navy (AN) designation, it will be substituted for the equipment nomenclature.

Block 6 WHEN DISCOVERED (WND): Enter the code that best identifies when the need for maintenance was discovered.

Code	Description
1	Lighting Off or Starting
2	Normal Operation
3	During Operability Tests
4	During Inspection
5	Shifting Operational Modes
6	During PMS
7	Securing
8	During AEC (Assessment of Equipment Condition)
9	No Failure, PMS Accomplishment Only
0	Not Applicable (use when reporting printing services, etc.)

Block 7 STATUS (STA): Enter the code that most accurately describes the effect of the failure or malfunction on the operational performance capability of the equipment when the need for maintenance was first discovered.

Code	Description
1	Operational
2	Non-Operational
3	Reduced Capability
0	Not Applicable (use if reporting printing services, etc.)

Block 8 CAUSE (CAS): Enter the code that best describes the cause of the failure or malfunction when the need for maintenance was first discovered. (Refer to Appendix A, data element "CAUSE" for an expanded definition of the allowable codes/values).

Code	Description
1	Abnormal Environment
2	Manufacturer/Installation Defects
3	Lack of Knowledge or Skill
4	Communications Problem
5	Inadequate Instruction/Procedure
6	Inadequate Design
7	Normal Wear and Tear
0	Other or No Malfunction

Block 9 DEFERRAL REASON (DFR): Leave blank.

Block 10 Block is reserved for TYCOM directed applications. Refer to TYCOM instruction for use.

Block 11 Block is reserved for TYCOM directed applications. Refer to TYCOM instruction for use.

Block 12 Block is reserved for TYCOM directed applications. Refer to TYCOM instruction for use.

Block 13 IDENT./EQUIPMENT SERIAL NUMBER: Enter the identification or serial number of the equipment or system on which maintenance is being deferred. For Hull, Mechanical & Electrical (HM&E) equipment, enter the Valve Mark/Electric Symbol Number (ESN) or

Primary Identification Number. For electronic equipment, enter the manufacturer's serial number of the equipment or system on which maintenance is being deferred.

Block 14 EIC: Enter the Equipment Identification Code of the component, equipment, subsystem, or system for which the maintenance is being reported.

Block 15 SAFETY HAZARD: Enter an "X" or applicable safety code if the maintenance action describes a problem or condition which has caused, or has the potential to cause serious injury to personnel or material. A brief explanation must be included in the Remarks / Description field (Block 35). For example: "RE-INSPECTION OF SEPARATOR FOR PRESENCE OF OIL AFTER RINSE. MRC A-27 EVIDENTLY NOT DONE. PRESENCE OF OIL RESULTED IN FIRE IN HP AIR SYSTEM WHEN COMPRESSOR OPERATED UNDER LOAD. FIRE BADLY BURNED VALVE AHP-287, REQUIRING REPLACEMENT."

NOTE:

The ship's 3-M system coordinator will forward a copy of all NAVSEA 4790/2K documentation having an entry in this field to the safety officer for review. (Refer to Appendix A, data element "SAFETY HAZARD" for an expanded definition of the allowable codes/values).

Code	Description
1	Critical Safety or Health Deficiency-Correct Immediately
2	Serious Safety or Health Deficiency-Suspension of Equipment/System/Space Use is Required
3	Moderate Safety or Health Deficiency-Waiver of Equipment/System/Space Use is granted Pending Correction of the Item
4	Minor Safety or Health Deficiency
5	Negligible Safety or Health Deficiency
0	Maintenance Action is Not Safety Related

NOTE:

Codes "6" through "9" may be locally assigned by TYCOMs for additional safety codes required.

Block 16 LOCATION: Enter the location (compartment number, deck, frame, or side notation), that best describes the location of the equipment requiring maintenance as identified in Block 13. If none of the above mentioned location identifications are appropriate, enter description of the location (e.g., FANTAIL, FLIGHT DECK, etc.).

Block 17 WHEN DISCOVERED DATE: Enter the Julian date when the equipment or system failure or malfunction was discovered.

Block 18 ALTERATIONS: Leave blank. If the completed maintenance action resulted in a configuration change or alteration, refer to the instructions for submitting an NAVSEA 4790/CK form.

Blocks 19 through 24 - FOR INSURV USE - no entries required. See Section 2 for details.

B-2.6.2 Section II - Deferral Action (Block 25 - 28) - Leave blank.

B-2.6.3 Section III - Completed Action

Block 29 ACT. TKN.: Enter the code that best describes the action taken to complete the maintenance.

Code	Description
1	Maintenance Action Completed; Parts Drawn from Supply
2	Maintenance Action Completed; Required Parts Not Drawn from Supply (local manufacture, pre-expended bins, etc.)
3	Maintenance Action Completed; No Parts Required

NOTE:

The following second character codes can be used with the above Action Taken codes 1, 2, or 3 as directed by the TYCOM:

A	Maintenance Requirement Could Have Been Deferred
B	Maintenance Requirement Was Necessary
C	Maintenance Requirement Should Have Been Done Sooner
M	High Cost Repairs
T	The Equipment Being Reported Had a Time Meter

Code	Description
4	Canceled (When this code is used, the deferral will be removed from the CSMP. This code is not to be used with INSURV, safety, or priority 1 or 2 deferrals screened for accomplishment by the TYCOM or IUC.)
7	Maintenance Action Completed; 2-M (Miniature/Microminiature Electronic Modules) Capability Utilized.

NOTE:

The following second character codes can be used with Action Taken Code 7 to better describe the action taken:

A	Parts Drawn from Supply Utilized
B	Parts Not Drawn from Supply Utilized
C	Automatic Test Equipment (ATE) Utilized
D	ATE and Parts Drawn from Supply Utilized
E	ATE and Parts Not Drawn from Supply Utilized

Code	Description
8	Periodic Time Meter/Cycle Counter reporting. (This code is not applicable to the "FINAL ACTION" code reported by the repair activity.)
9	Maintenance Action Completed; 3M Fiber Optic Repair

NOTE:

The following second character codes can be used with Action Taken Code 9 to better describe the action taken:

A	FOTE, multimode ST MQJs utilized
B	FOTE, multimode heavy duty MQJs utilized
C	FOTE, multimode rotary mechanical splice MQJs utilized
D	FOTE, single mode ST MQJs utilized
E	FOTE, single mode heavy duty MQJs utilized
F	FOTE, multimode specialty MQJs utilized
G	FOTE, single mode specialty MQJs utilized
H	FOTE, not available
I	Standard MQJs not available

J Specialty MQJs not available

Code	Description
0	None of the Above

Block 30 S/F MHRS: Enter the total man-hours (to the nearest whole hour) that ship's force expended completing the maintenance. This includes time witnessing tests, man-hours expended in reinstallation, test, and documentation (not to exceed 1 hour), etc.

Block 31 COMPLETION DATE: Enter the Julian date the maintenance action was completed.

NOTE:

Blocks 32, 33, and 34 are only to be reported, if the equipment has been SEL designated.

Block 32 ACT. MAINT. TIME: Enter the total clock hours (to the nearest whole hour) during which ship's force maintenance was actually performed. This should include time for troubleshooting, but not delays.

Block 33 TI: Enter a single numeral (1 through 9) to indicate, to the nearest 10 percent, the percentage of active maintenance expended in troubleshooting. For example, if no troubleshooting is involved, enter "", "2" for 20%, "3" for 30%, "7" for 70%, etc.

Block 34 METER READING: Enter the time meter reading (to the nearest whole hour) at the time of failure. If the equipment has more than one meter, designate the meter being recorded in Block 35 "REMARKS" using the letters "METRED" followed by the meter designator. An asterisk (*) must precede and follow the meter designation. Example: *METRED-1A2M1*.

Block 35 REMARKS/DESCRIPTION: Enter remarks relating to the maintenance action. These remarks should be brief, but complete and meaningful. Remarks should state what was wrong, what caused the failure (if known) and what was done to correct the problem. If "SAFETY HAZARD" (Block 15) is checked, a description of the condition creating the hazard should be

inserted in "REMARKS". If more space is needed, check Block 36 "CONT. SHEET" and continue the remarks on a second form using the same JCN.

B-2.7 Procedures for Documenting Changes, Additions, and Deletions to Previously Submitted Maintenance Actions

Print in large letters the word "Correction" at the top of the form. Enter the exact JCN (Blocks 1, 2, and 3) of the original 2K previously processed. Enter only the information to be added, deleted, or changed in the applicable blocks. Circle these blocks. If the selected data elements are to be deleted, without deleting the entire document, enter dashes (one dash per tic mark) within the data block to be deleted. When changing Block 35-REMARKS/DESCRIPTION, the entire narrative must be entered so that the correct information is included. It is not possible to change just a word or two.

B-2.8 Procedures to Add-On Remarks to the CSMP

To add to the remarks as originally submitted, print the words "ADD-ON REMARKS" at the top of a new 2K Form. Place an "X" in the "DEFL" block at the top right of the form, and enter in Block 1, 2, and 3 the JCN or the original 2K. In Block 35 "REMARKS/DESCRIPTION", print the initials of the activity adding on to the remarks followed by a dash (-). For example, CINCPACFLT would be entered as "CPF-". Following the dash (-) enter the additional information. If it is necessary to rewrite, or change the narrative as originally submitted, use the procedures for "DOCUMENTING CHANGES, ADDITIONS, AND DELETIONS".

B-2.9 Handling Procedures

The NAVSEA 4790/2K Form is printed on paper that does not require carbon to make multiple copies. The original and three (3) copies of the 2K are required for documenting the maintenance action. The original and third copy shall be forwarded to the automated data processing facility serving the ship or activity. The first copy is submitted when reporting the completion of that maintenance action. The second copy is retained until completion of the maintenance action results in its removal from the CSMP; it may be destroyed.

OPNAV 4790/61K (Rev. 6-75) S/N 0107-LF-047-0911

SHIP'S MAINTENANCE ACTION FORM (2-KILO)

COMP [ ] DEF [X]

JOB CONTROL NUMBER

SECTION I. IDENTIFICATION

1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. APL/AEL
2 1 6 8 5	E B 0 1	0 1 1 1	0 2 1 2 0 0 1 6 6

A. SHIP'S NAME	5. EQUIPMENT NOUN/NAME	6. WND	7. STA	8. CAS	9. DPR	10.	11.	12.
USS STOUT	B O I L E R R H							

B. HULL NUMBER	13. IDENT./EQUIPMENT SERIAL NUMBER	14. EIC
DDG-55	I A	F 1 0 1

1 2 7 6

15. SAFETY HAZARD	16. LOCATION (Compartment, Deck, Frame, Side)	17. WHEN DISCOVERED DATE YR DAY
X	B 1 - 5 - 6 1 - 0	4 0 7 1

CONFIGURATION CHANGE	FOR INSURV USE

18. ALTERATIONS (SHIPALT, ORDALT, Fld Chg, etc.)	19. "/"	20. INSURV NUMBER	21. SUFFIX	22. U	23. S	24. P/F

SECTION II. DEFERRAL ACTION

25. S/F MHRS. EXP.	26. DEFER. DATE YR DAY	27. S/F MHRS. REM.	28. DEADLINE DATE YR DAY
0 0 2 0	4 0 7 1	0 0 1 7	4 0 4 1

SECTION III. COMPLETED ACTION — FOR SELECTED EQUIPMENTS ONLY

29. ACT. TYPE	30. S/F MHRS.	31. COMPLETION DATE YR DAY	32. ACT. MAINT. TIME	33. TY	34. METER READING

SECTION IV. REMARKS/DESCRIPTION

35. REMARKS/DESCRIPTION

SAFETY VLV B OPERATING ERRATIC
INDICATING A BENT VLV SPINDLE.
XXXREMOVE SAFETY VLV DELIVER
TO IMA DISASSEMBLE AND IN-
SPECT. REPAIR VLV AND TEST. SHIP
PICKUP VLV RE-INSTALL AND TEST
INOPERABLE SAFETY VLV BOILER
MAY BE OVER PRESSURIZED.

35. CONT. SHEET

37. CSMP SUMMARY

SAFETY VLV B SPINDLE BENT

38. FIRST CONTACT/MAINT. MAN (Print)	39. RATE	40. SECOND CONTACT/SUPERVISOR (Print)	41. PRI	42. TYP	43. INTEGRATED PRIORITY	SCREENING
J. LINGO	B T C	D. HAMMOND	1	2		

C. DIV. INIT.	D. DEPT. INIT.	E. COMMANDING OFFICER'S SIGNATURE	F. TYCOM AUTHORIZATION	44. IUC	45. TYCOM
D. M.	L. R.	C.E. PARKER, CDR, USN			

46. SPECIAL PURPOSE	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.	L.

SECTION V. SUPPLEMENTARY INFORMATION

47. BLUEPRINTS, TECH. MANUALS, PLANS, ETC.	PREARR CONF REQ'D	48. PREARRIVAL/ARRIVAL CONFERENCE ACTION/REMARKS
NS - 3 5 1 - 0 6 6 4	X	

SECTION VI. REPAIR ACTIVITY PLANNING/ACTION

49. REPAIR W/C	50. EST. MHRS.	51. ASST. REPAIR W/C	52. ASST. EST. MHRS.	53. SCHED. START DATE YR DAY	54. SCHED. COMP DATE YR DAY

55. REPAIR ACTIVITY UIC	56. WORK REQ. ROUTINE	57. EST. MANDAYS	58. EST. MANDAY COST $	59. EST. MATERIAL COSTS $

60. EST. TOTAL COST $	61. JOB ORDER NUMBER	62. LEAD P&E CODE	63. DATE OF EST. YR DAY

64. FINAL ACT.	65. MHRS. EXPENDED	66. DATE COMPLETED YR DAY	G. COMPLETED BY (Signature - Rate)	H. ACCEPTED BY (Signature - Rate/Rank)

Figure B-9: Ships Maintenance Acton Form For A Deferred Maintenance Action

OPNAV 4790/2K (Rev. 6-78) S/N 0107-LF-047-6011 **SHIP'S MAINTENANCE ACTION FORM (2-KILO)** COMP X DEF.

SECTION I. IDENTIFICATION — JOB CONTROL NUMBER

1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. APL/AEL
52692	WT05	0344	897745 50

A. SHIP'S NAME	5. EQUIPMENT NOUN NAME	6. WMD	7. STA	8. CAS	9. DFR	10.	11.	12.
USS GRIDLEY	AN/SPS-49							

B. HULL NUMBER	13. IDENT./EQUIPMENT SERIAL NUMBER	14. EIC	
CG-21	E-12	P34A	527

15. SAFETY HAZARD ☐	16. LOCATION (Compartment, Deck, Frame, Side)	17. WHEN DISCOVERED DATE YR DAY
	01-114-1-Q	94 04

CONFIGURATION CHANGE	FOR INSURV USE					
18. ALTERATIONS (SHIPALT, ORDALT, Fld Chg, etc.)	19. "/"	20. INSURV NUMBER	21. SUFFIX	22. U	23. S	24. P/F

SECTION II. DEFERRAL ACTION

25. S/F MHRS. EXP.	26. DEFER. DATE YR DAY	27. S/F MHRS. REM.	28. DEADLINE DATE YR DAY

SECTION III. COMPLETED ACTION — FOR SELECTED EQUIPMENTS ONLY

29. ACT. TYPE	30. S/F MHRS.	31. COMPLETION DATE YR DAY	32. ACT. MAINT.	33. TY	34. METER READING
1	0010	94 09	055	5	077444

SECTION IV. REMARKS/DESCRIPTION

35. REMARKS/DESCRIPTION

KLYSTRON FAULT WILL NOT RESET NO OUTPUT FROM KLYSTRON. RE-PLACED KLYSTRON 2V1 AND BOTH MODULATOR SWITCH TUBES 2A5V1 AND 2A6V1.

METERED- 2A1M1

36. CONT. SHEET

37. CSMP SUMMARY

38. FIRST CONTACT/MAINT. MAN (Print)	39. RATE	40. SECOND CONTACT/SUPERVISOR (Print)	41. PYR	42. T/A	43. INTEGRATED PRIORITY SCREENING

C. DIV. INIT.	D. DEPT. INIT.	E. COMMANDING OFFICER'S SIGNATURE	F. TYCOM AUTHORIZATION	44. IUC	45. TYCOM

46. SPECIAL PURPOSE	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.	L.

SECTION V. SUPPLEMENTARY INFORMATION

47. BLUEPRINTS, TECH. MANUALS, PLANS, ETC.	AVAILABLE ON BOARD YES	NO	48. PREARRIVAL/ARRIVAL CONFERENCE ACTION/REMARKS
			- -

SECTION VI. REPAIR ACTIVITY PLANNING/ACTION

49. REPAIR WC	50. EST. MHRS.	51. ASST. REPAIR WC	52. ASST. EST. MHRS.	53. SCHED. START DATE YR DAY	54. SCHED. COMP DATE YR DAY

55. REPAIR ACTIVITY UIC	56. WORK REQ. ROUTINE	57. EST. MANDAYS	58. EST. MANDAY COST $	59. EST. MATERIAL COSTS $

60. EST. TOTAL COST $	61. JOB ORDER NUMBER	62. LEAD P&E CODE	63. DATE OF EST. YR DAY

64. FINAL ACT.	65. MHRS. EXPENDED	66. DATE COMPLETED YR DAY	G. COMPLETED BY (Signature - Rate)	H. ACCEPTED BY (Signature - Rate/Rank)
			R. J. BATES, ET2	P. J. CARLTON, ETCS

Figure B-10: Ships Maintenance Acton Form For A Completed Maintenance Action Without Prior Deferral

CORRECTION

OPNAV 4790/2K (Rev. 6-78) S/N 0107-LF-047-0011 — SHIP'S MAINTENANCE ACTION FORM (2-KILO) — COMP — DEFC X

SECTION I. IDENTIFICATION

JOB CONTROL NUMBER			
1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ. NO.	4. APL/AEL
2 0 5 7 4	O E 0 1	A 2 9 9	

A. SHIP'S NAME	5. EQUIPMENT NOUN NAME	6. WHO	7. STA	8. CAS	9. DFR	10.	11.	12.

B. HULL NUMBER	13. IDENT./EQUIPMENT SERIAL NUMBER	14. EIC

15. SAFETY HAZARD ☐	16. LOCATION (Compartment, Deck, Frame, Side)	17. WHEN DISCOVERED DATE YR / DAY

CONFIGURATION CHANGE	FOR INSURV USE					
18. ALTERATIONS (ESWPALT, ORDALT, Fld Chg, etc.)	19. "/"	20. INSURV NUMBER	21. SUFFIX	22. U	23. S	24. P/F

SECTION II. DEFERRAL ACTION

25. S/F MHRS. EXP.	26. DEFER. DATE YR / DAY	27. S/F MHRS. REM.	28. DEADLINE DATE YR / DAY
		0 0 3 0	

SECTION III. COMPLETED ACTION — FOR SELECTED EQUIPMENTS ONLY

29. ACT. TKN.	30. S/F MHRS.	31. COMPLETION DATE YR / DAY	32. ACT. MAINT. TIME	33. TI	34. METER READING

SECTION IV. REMARKS/DESCRIPTION

35. REMARKS/DESCRIPTION

36. CONT. SHEET

37. CSMP SUMMARY

38. FIRST CONTACT/MAINT. MAN (Print)	39. RATE	40. SECOND CONTACT/SUPERVISOR (Print)	41. PRI	42. TA	43. INTEGRATED PRIORITY SCREENING

C. DIV. INIT.	D. DEPT. INIT.	E. COMMANDING OFFICER'S SIGNATURE	F. TYCOM AUTHORIZATION	44. IUC	45. TYCOM

46. SPECIAL PURPOSE	A.	B.	C.	D.	E.	F.	G.	H.	I.	J.	K.	L.

SECTION V. SUPPLEMENTARY INFORMATION

47. BLUEPRINTS, TECH. MANUALS, PLANS, ETC.	AVAILABLE ON BOARD YES	NO	48. PREARRIVAL/ARRIVAL CONFERENCE ACTION/REMARKS

SECTION VI. REPAIR ACTIVITY PLANNING/ACTION

49. REPAIR WC	50. EST. MHRS.	51. ASST. REPAIR WC	52. ASST. EST. MHRS.	53. SCHED. START DATE YR / DAY	54. SCHED. COMP DATE YR / DAY

55. REPAIR ACTIVITY UIC	56. WORK REQ. ROUTINE	57. EST. MANDAYS	58. EST. MANDAY COST $	59. EST. MATERIAL COSTS $

60. EST. TOTAL COST $	61. JOB ORDER NUMBER	62. LEAD P&E CODE	63. DATE OF EST. YR / DAY

64. FINAL ACT.	65. MHRS. EXPENDED	66. DATE COMPLETED YR / DAY	G. COMPLETED BY (Signature - Rate)	H. ACCEPTED BY (Signature - Rate/Rank)

Figure B-11: Ships Maintenance Acton Form Change To A Previously Submitted Deferred Maintenance Action

ADD-ON REMARKS

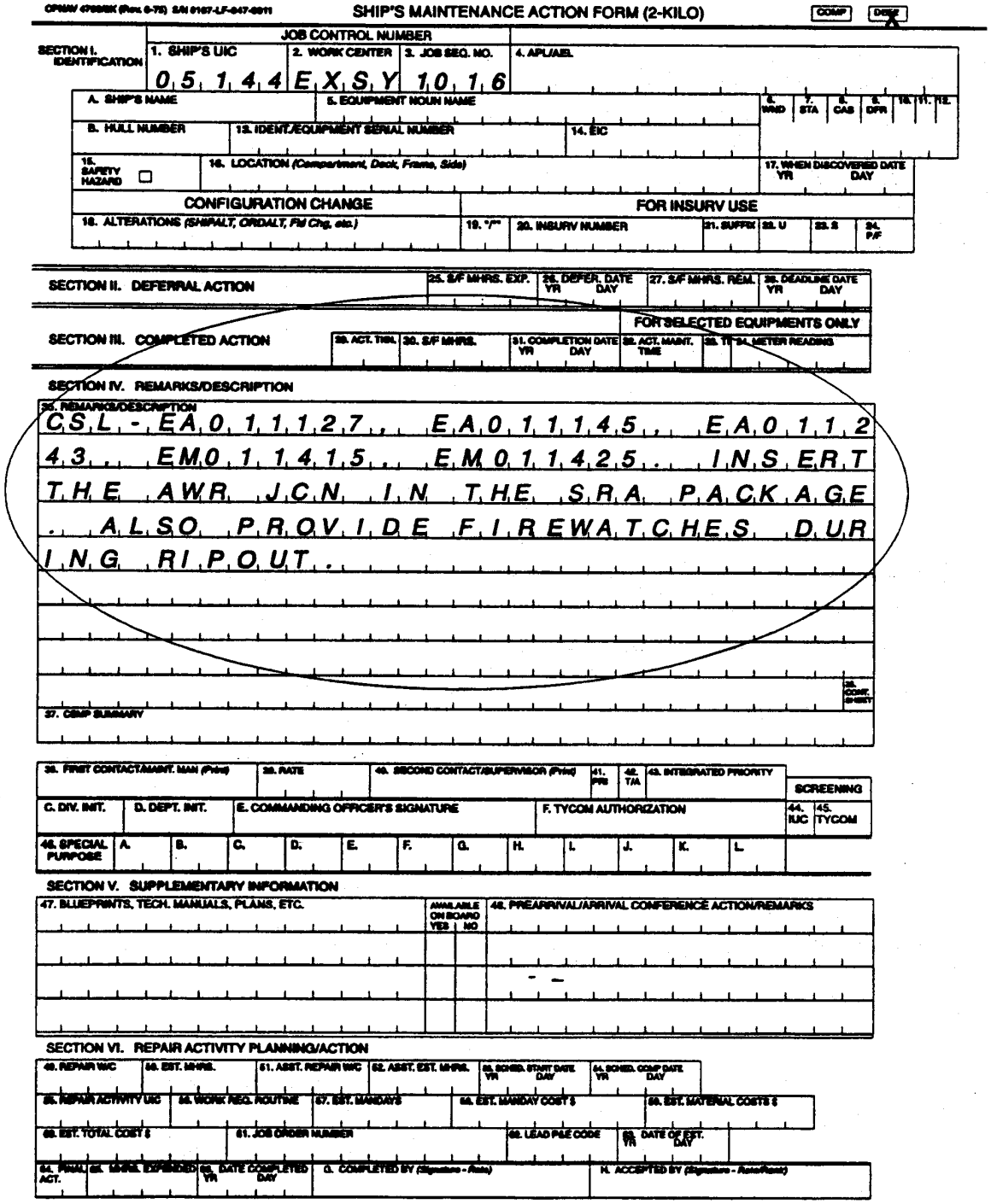


Figure B-12: Ships Maintenance Acton Form Add-on Remarks To A Previously Submitted Deferred Maintenance Action

B-3 SUPPLEMENTAL FORM (NAVSEA 4790/2L)

This form is used to provide amplifying information (such as drawings and listings) related to a maintenance action, reported on a NAVSEA 4790/2K Form. The 2L may be used to list multiple item serial numbers and locations for which identical maintenance requirements exist from an outside activity; or to provide a list of drawings and sketches that would be helpful in the accomplishment of the maintenance.

The 2L form is retained onboard ship with the suspense copy of the corresponding 2K form that deferred the maintenance action. The 2L is never submitted to the ADP facility servicing the activity, as the data on the 2L will never be entered into the computer. However, the 2L can be attached to the original 2K or computer produced (simulated) 2K when submitted to an assisting activity.

B-3.1 Special Application

If a Master Job Catalog (MJC) routine has been added to the CSMP for service routines or for IMA sheet metal hose manufacturing, multiple NAVSEA 4790/2Ls may be used for the same JCN. Each 2L would result in an additional task being added to the JCN, thus accounting for man-hour expenditure for each task. Similarly, the 2L could be used to request critical hose manufacturing by referencing the MJC number and using the ship's own JCN, thus precluding the necessity to submit multiple complete NAVSEA 4790/2Ks.

The form is separated into three sections: SECTION I "IDENTIFICATION", SECTION II "REMARKS/SKETCHES", and SECTION III "AUTHENTICATION". When using the 2L, all sections of the form are to be filled out. On the NAVSEA 4790/2K Form, be sure to enter the notation "2L USED" in the "REMARKS/DESCRIPTION" section, Block 35.

NOTE:

An example of a completed NAVSEA 4790/2L form can be found following these written instructions.

PROCEDURES FOR PROVIDING ADDITIONAL INFORMATION USING THE 2L

B-3.2.1 Section I - Identification

Block A Enter the SHIP'S NAME

Block B Enter the SHIP'S HULL NUMBER

JOB CONTROL NUMBER: Enter the same JCN (Ship's UIC, Work Center, and Job Sequence Number) assigned to the original maintenance action in Blocks C, D, and E

Block F CONTINUATION FOR: Enter an "X" in one of the blocks to indicate that this 2L is a continuation of either an NAVSEA 4790/2K, 4790/2L, or a 4790/2P Form.

B-3.2.2 Section II - Remarks/Sketches

Block G Enter the information you wish to provide; such as, a list of serial numbers and locations for which identical maintenance requirements exist; or sketches or drawings that may be useful in the accomplishment of the maintenance action.

B-3.2.3 Section III - Authentication

Block H FIRST CONTACT/MAINTENANCE MAN: The maintenance person preparing the form prints his/her name in this Block.

Block I DATE (YR/DAY): Enter the Julian date the document is prepared.

Block J SECOND CONTACT/SUPERVISOR: The work center supervisor's prints his name following his review of the document in the block.

Block K DATE: The work center supervisor enters the Julian date the document was reviewed.

OPNAV 4790/2L (Rev. 6-73) S/N 0107-LF-770-3060 SUPPLEMENTAL FORM (2-LIMA)

SECTION I. IDENTIFICATION				
A. SHIP'S NAME	B. HULL NUMBER	JOB CONTROL NUMBER		
		C. SHIP'S UIC	D. WORK CENTER	E. JOB SEQ. NO.
USS CHANDLER	DDG-996	2 0 5 7 5	WM 0 1	0 1 7 3

F. CONTINUATION FOR ☒ 2K ☐ 2L ☐ 2P

SECTION II. REMARKS/SKETCHES

G.

BINOCULARS 7 X 50 FOLLOWING SERIALS TO BE COLLIMATED

17865

17866

17867

20189

20195

21754

21755

SECTION III. AUTHENTICATION			
H. FIRST CONTACT/MAINTENANCE MAN (Print)	I. DATE YR DAY	J. SECOND CONTACT/SUPERVISOR (Print)	K. DATE YR DAY
MULLINS, QM2	4 1 9 7	BROWN, QMC	4 1 9 7

* U.S. Government Printing Office: 1975-603-627/5225 2-1

Figure B-13: SUPPLEMENTAL FORM Containing an Equipment Listing

OPNAV 4790/2L (Rev. 6-73) S/N 0107-LF-770-3060 SUPPLEMENTAL FORM (2-LIMA)

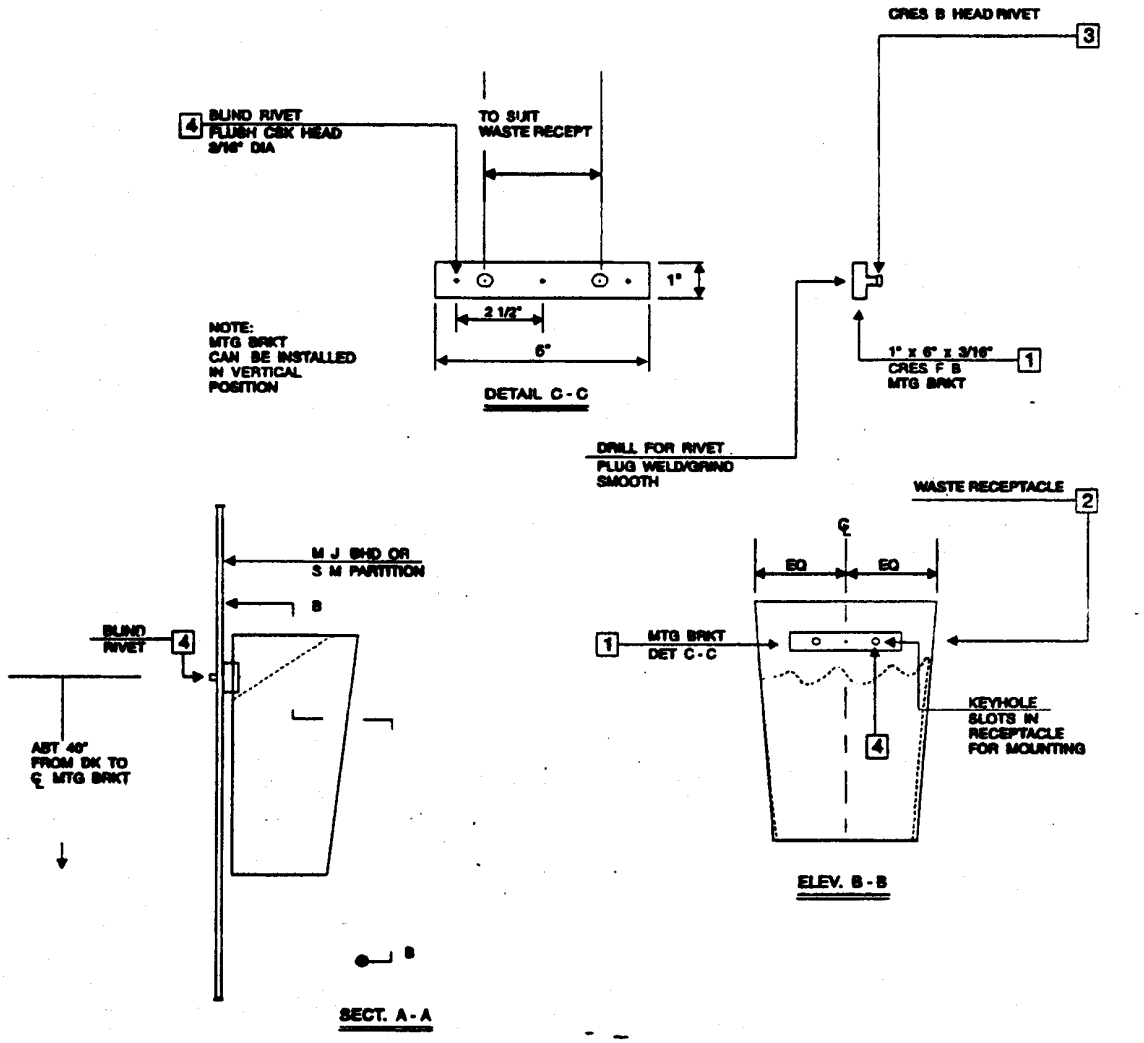
SECTION I. IDENTIFICATION

A. SHIP'S NAME	B. HULL NUMBER	JOB CONTROL NUMBER		
		C. SHIP'S UIC	D. WORK CENTER	E. JOB SEQ. NO.
USS CHANDLER	DDG-996	21439	WD01	0195

F. CONTINUATION FOR [X] 2K [ ] 2L [ ] 2P

SECTION II. REMARKS/SKETCHES

G.



INSTALLATION & MOUNTING DETAILS OF WASTE RECEPTACLE MOUNTED ON M J BULKHEADS & S M PARTITIONS

SECTION III. AUTHENTICATION

H. FIRST CONTACT/MAINTENANCE MAN (Print)	I. DATE YR DAY	J. SECOND CONTACT/SUPERVISOR (Print)	K. DATE YR DAY
A. J. SWENEY, SN	32,07	B. J. WALTERS, BMI	32,07

* U.S. Government Printing Office: 1975-603-627/5225 2-1

Figure B-14: SUPPLEMENTAL FORM Containing a Sketch/Drawing

B-4 MAINTENANCE PLANNING AND ESTIMATING FORM (NAVSEA 4790/2P)

This form is used along with an NAVSEA 4790/2K Form deferring maintenance to be done by an IMA. Attached to the original 2K at the intermediate maintenance activity, it is used by the IMA to screen and plan the job in detail. This planning information will include information pertinent to the lead work center (LWC), assist work center(s), material requirements, technical documentation, and cost estimates required to complete the maintenance action. (Upon approval of the TYCOM, planning, estimating and scheduling information may be entered in the appropriate sections of the NAVSEA 4790/2K Form).

NOTE:

An example of a completed NAVSEA 4790/2P form can be found following these written instructions.

B-4.1 Procedures For Documenting Planning & Estimating Data

B-4.1.1 Section I - Planning

Block A — Enter the SHIP'S NAME originating the request for assistance (from the 2K)

Block B — Enter the SHIP'S HULL number originating the request for assistance (from the 2K)

JOB CONTROL NUMBER: Enter the same JCN (Ship's UIC, Work Center, and Job Sequence Number) assigned to the original maintenance action. It must be identical to the JCN of the attached 2K in Blocks 1, 2, and 3.

Block 8 — SCREENING ACTION: The appropriate action to be taken must be indicated in this block. It may be used by the IUC, however, the TYCOM Representative's decision has precedence. The IUC/TYCOM REP must indicate the level at which the maintenance is to be done, or if the job is disapproved. There must be an entry in either "a", "b", or "c" if screened by the IUC; and "h", "i", or "j" when screened by the TYCOM REP. Blocks "d" through "m" may be used to identify qualifying actions. If "accomplished with modifications" is checked, the IUC/TYCOM will provide amplifying remarks in Section IV, Block 49. If the work is disapproved ("g" or "n"), amplifying remarks should be made in Section IV, Block 49.

Block C/D IUC/TYCOM SIGNATURE: The signature of the IUC and/or TYCOM REP must be entered in these blocks following the screening process.

THE FOLLOWING BLOCKS, AS APPLICABLE, ARE FILLED-IN BY THE PLANNING AND SCHEDULING SECTION AFTER THE IUC AND/OR TYCOM REP HAS SCREENED THE JOB FOR ACCEPTANCE (Block 8)

NOTE:

Blocks 4 through 7 are for Master Job Catalog (MJC) development.

Block 4 PERIODIC MAINTENANCE REQUIREMENT: Enter the code that identifies the specific periodic maintenance requirement. This code may be a PMS maintenance requirement code, a code identifying a periodic requirement of a PERA (Planning and Engineering for Repair and Alterations), or a calibration requirement of MEASURE (Metrology Automated System for Uniform Recall and Reporting), etc….

Block 5 PERIODICITY: Enter the number of months between which the periodic maintenance requirement is to be done.

Block 6 YYMM ISSUED: Enter the four numbers used to identify the year and month during which the periodic maintenance requirement entered in Block 4 was issued. The first two digits identify the year and the last two digits the month; e.g., "9402" represents February 1994.

Block 7 SPECIAL DATA: Reserved for future use.

Block 8 See Block "8" above.

Block 9 QUALITY ASSURANCE REQUIREMENTS: Enter an "X" in the applicable Blocks "a" through "l" to indicate the specific planning actions, work controls, and auditable records in support of individual TYCOM management needs.

Block 10 SPECIAL REQUIREMENTS:

KEY EVENT: A two-digit number identifies a key event that influences a job, or is influenced by the completion of a job. A blank in this block indicates that the job is not associated with a key event. The Key Event code with a definition is assigned and managed by TYCOM instruction.

SPECIAL INTEREST: An "X" entered in this block indicates that this job has significant management interest, and keys the job to be selected for job management reports.

DRY DOCK REQUIRED: An "X" in this block shows the requested maintenance requires the ship to be dry-docked.

PRE OVERHAUL TEST REQUIRED: An "X" entered in this block identifies a specific test prior to an equipment or ship overhaul.

POST OVERHAUL TEST REQUIRED: An "X" entered in this block identifies a specific test that must be completed after equipment or ship overhaul.

DEPARTURE REQUIRED: An "X" entered in this block shows that if the maintenance requested is not done by the required specifications, notice of this departure is to be sent to the TYCOM.

Block 11 See Block 11 below under "BLOCKS FILLED-IN BY THE REPAIR OFFICER"

B-4.1.2 Section II - Scheduling

Block 12 LEAD WORK CENTER: Enter the code (left to right) of the "lead" repair work center assigned to the job. (Refer to Appendix A data element "IMA REPAIR WORK CENTER" for standard IMA work center codes.)

Blocks 13, 19, 25, 31, 37, an 43:
SCHED START DATE: Enter the Julian date that work is to be started by each repair work center. During the planning process when the availability date is unknown, these blocks may be left blank.

Blocks 14, 20, 26, 32, 38, 44:
SCHED COMP DATE: Enter the Julian date that the work of the individual repair work center must be completed.

Block 15, 21, 27, 33, 39, and 45:
EST MHRS: Enter an estimate of the total number of man-hours necessary for each repair work center to complete its assigned work.

Blocks 16, 22, 28, 34, 40, and 46:
KEY OP: Number the logical sequence, e.g., 001, 002, 003, etc., of the tasks identified in Blocks 17, 23, 29, 35, 41, and 47.

Blocks 17, 23, 29, 35, 41, and 47:
TASK: Enter the description(s) of the task(s) for which the repair work center(s) assigned are responsible.

Blocks 18, 24, 30, 36, and 42:
ASST WORK CENTER: Enter the code (left to right) of the repair work center(s) assisting the lead repair work center. (Refer to Appendix A, data element "IMA REPAIR WORK CENTER" for standard IMA work center codes.)

B-4.1.3 Section III - Technical Documentation

Block 48
TECHNICAL DOCUMENTATION: Enter any blueprints, technical manuals, etc., which might be of use in the accomplishment of the maintenance. Indicate by an "X" whether the publications held by the IMA or the tended unit.

B-4.1.4 Section IV - IUC/Repair Activity/TYCOM Remarks

Block 49
REMARKS: Used by the screening and repair managers to enter any remarks that amplify the scope or limitations applicable to the accomplishment of the maintenance.

B-4.1.5 Section V - Supplemental Planning

THE FOLLOWING BLOCKS ARE FILLED-IN WHEN REQUIRED BY THE TYCOM AND ONLY WHEN ESTIMATING THE COST OF DEPOT LEVEL WORK

NOTE:

Other uses of these blocks can be defined by TYCOM directive.

Block 50 EST MAN-DAYS: Enter the total number of estimated man-days (for all involved repair work centers) required too accomplish the JCN. If the estimated man-day is less than one, enter "1".

Block 51 EST MAN-DAYS COST $: Enter an estimate of the total man-day costs required to accomplish the JCN.

Block 52 EST MATERIAL COST: Enter an estimate of the total material cost.

Block 53 EST TOTAL COST $: Enter an estimate of the total cost to complete the job (add blocks 51 and 52).

B-4.2 Repair Officer Actions

THE FOLLOWING BLOCKS ARE FILLED-IN BY THE REPAIR OFFICER

Block 11 NORMALLY DONE BY: Entered by the Repair Officer, an "X" entered into the appropriate block (S/F, IMA, DEPOT) allows the collection of data for evaluation of the costs of the IMA relative to other maintenance activities.

B-4.3 Procedures for Documenting Changes, Additions, and Deletions

Any block, with the exception of the JCN, that has had the planning and estimating information entered into the supporting ADP system can be added, deleted, or changed. Refer to the instructions described for submitting a correction to an NAVSEA 4790/2K Form.

When modifying information in Section II - SCHEDULING, the modification must contain the appropriate lead or assist WCs.

When modifying information in Section III - TECHNICAL DOCUMENTATION and Section IV - IUC/REPAIR ACTIVITY/TYCOM REMARKS, the entire section must be revised so that correct information and change information is included. Do not change a word or two in these sections without resubmitting the entire section.

NOTE:

In the event the original lead work center (LWC) must be changed and a new LWC assigned, the planning section should submit the applicable documentation to change the LWC. Planning and estimating will submit a new planning sheet showing the new LWC and assist WC(s).

OPNAV 4700/2P (6-94) **MAINTENANCE PLANNING & ESTIMATING FORM (P & E)**

SECTION I. PLANNING

A. SHIP'S NAME	B. HULL NUMBER	JOB CONTROL NUMBER 1. SHIP'S UIC	2. WORK CENTER	3. JOB SEQ NO
USS UNDERWAY	AS-48	20888	EA05	2858

4. PERIODIC MAINTENANCE REQUIREMENT	5. PERIODICITY	6. YYMM ISSUED	7. SPECIAL DATA

8. SCREENING ACTION

	IUC	TYCOM	
a		h	DEPOT ACCOMPLISH
b	X	i	SMA ACCOMPLISH
c		j	TSUNAMREC/NOSSO/ETC.
d		k	SHIP'S FORCE (SMA) (DEPOT) ASSIST
e		l	SHIP TO SHOP
f		m	ACCOMPLISH WITH MODIFICATIONS
g		n	DISAPPROVE

9. QUALITY ASSURANCE REQUIREMENT

a		g	X SPECIAL CLEANING
b	LEVEL 1	h	X SPECIAL TESTING
c	NUCLEAR LEVEL 1	i	SPECIAL IDENTIFICATION
d	NON-DESTRUCTIVE TEST	j	NOISE CRITICAL
e	NUCLEAR WORK PROCEDURES	k	RADIOLOGICAL CONTROL
f	SUBMARINE ANTENNA ENGINEERING DIVISION	l	X OTHER CONTROLS

HAZMAT

10. SPECIAL REQUIREMENTS

a		KEY EVENT
b		SPECIAL INTEREST
c		DRY DOCK REQUIRED
d		PRE OVERHAUL TEST REQUIRED
e	X	POST OVERHAUL TEST REQUIRED
f		DEPARTURE TEST REQUIRED

C. IUC SIGNATURE: WIENOSJ

D. TYCOM SIGNATURE:

11. NORMALLY DONE BY: a [ ] S/F b [X] SMA c [ ] DEPOT

SECTION II. SCHEDULING

12 LEAD WORK CENTER	13 SCHED START DATE YR DA	14 SCHED COMP DATE YR DA	15 EST MHRS	16 KEY OP	17 TASK
25A	4053	4068	0083	02	EVAC & RECHG
18 ASST WORK CENTER	**19 SCHED START DATE YR DA**	**20 SCHED COMP DATE YR DA**	**21 EST MHRS**	**22 KEY OP**	**23 TASK**
03T	4054	4067	0004	03	UNSHIP & CLAD
24 ASST WORK CENTER	**25 SCHED START DATE YR DA**	**26 SCHED COMP DATE YR DA**	**27 EST MHRS**	**28 KEY OP**	**29 TASK**
03A	4051	4069	0049	01	MONITOR FREON
30 ASST WORK CENTER	**31 SCHED START DATE YR DA**	**32 SCHED COMP DATE YR DA**	**33 EST MHRS**	**34 KEY OP**	**35 TASK**
26A	4056	4057	0006	04	BRAZE/WELD
36 ASST WORK CENTER	**37 SCHED START DATE YR DA**	**38 SCHED COMP DATE YR DA**	**39 EST MHRS**	**40 KEY OP**	**41 TASK**
51A	4053	4058	0021	05	REWIND & BAKE
42 ASST WORK CENTER	**43 SCHED START DATE YR DA**	**44 SCHED COMP DATE YR DA**	**45 EST MHRS**	**46 KEY OP**	**47 TASK**

SECTION III. TECHNICAL DOCUMENTATION

48	ON BOARD YES	ON BOARD NO
NAVSHIPS TECH MAN 351-0665	X	

SECTION IV. IUC/REPAIR ACTIVITY/TYCOM REMARKS

49 COMPRESSOR MOTOR SHORTS

SECTION V. SUPPLEMENTAL PLANNING

50 EST MANDAYS	51 EST MANDAYS COST $	52 EST MATERIAL COST $	53 EST TOTAL COST $	54

Figure B-15: Completed NAVSEA 4790/2P

MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

APPENDIX C

3-M AUTOMATED PERIODIC MAINTENANCE PROGRAM (MASTER JOB CATALOG AND PERIODIC MAINTENANCE REQUIREMENTS)

APPENDIX C

REFERENCES

REFERENCE	INSTRUCTION NO.	SUBJECT
(a)	CINCLANTFLT/CINCPACFLT INST 4790.3	JOINT FLEET MAINTENANCE MANUAL

APPENDIX C

3-M AUTOMATED PERIODIC MAINTENANCE PROGRAM (MASTER JOB CATALOG AND PERIODIC MAINTENANCE REQUIREMENTS) TABLE OF CONTENTS

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APPENDIX C

3-M AUTOMATED PERIODIC MAINTENANCE PROGRAM (MASTER JOB CATALOG AND PERIODIC MAINTENANCE REQUIREMENTS) LIST OF FIGURES

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APPENDIX C

3-M AUTOMATED PERIODIC MAINTENANCE PROGRAM (MASTER JOB CATALOG AND PERIODIC MAINTENANCE REQUIREMENTS)

C-1 PURPOSE

This appendix is to describe the automated Periodic Maintenance Program (PMP) capabilities, provide guidelines for its use, and standardize the requirements in support of fleet and depot maintenance and material 3-M reporting. This program was established to assist maintenance and material managers in executing Class Maintenance Plans (CMP) and Life Cycle Manager (LCM) requirements to sustain the operability of weapons systems.

C-2 SCOPE

Intermediate Maintenance Activities (IMAs) require the capability to generate work requests for periodic maintenance. Periodic Maintenance Requirements (PMRs) provides that capability. PMR also provides the capability to schedule, maintain, issue and report work accomplished for PMR items. The data elements for PMR conform to 3-M standards.

PMR requires the reporting of maintenance actions and configuration changes on all categories of equipment.

C-3 OBJECTIVE

The automated PMP can provide a means to effectively manage and control all PMRs beyond the scope of the organizational level Planned Maintenance System (PMS). It is managed by integrating the SYSCOM Life Cycle Requirements (LCRs), Configuration Data Managers' Database, periodicities invoked by system and equipment engineers with the 3-M Master Job Catalog (MJC) and PMR modules of the intermediate maintenance management automated systems. This integration provides an automated pre-planned deferral to be added to the Current Ship's Maintenance Project (CSMP) and procurement of repair parts specified by technical repair standards or other controlled work procedures. The system:

a. Provides continuous evaluation and adjustment of the CMP to reflect the specification of the Systems Command (SYSCOM) Platform Managers and the capabilities and capacities of fleet maintenance activities.

b. Adjusts the Ship Configuration and Logistics Support Information System (SCLSIS) specifications and the Configuration Data Manager (CDM) databases to reflect all levels of equipments and components for existing and emerging PMRs.

c. Develops, evaluates and implements an MJC deferral for each PMR added to the CMP.

d. Distributes a Unit Identification Code (UIC) unique configuration and scheduling record for each CMP periodic requirement to each activity maintaining the ship class.

e. Maintains the MJC and PMR database at the central facility (regional hub, port facility, Readiness Support Group (RSG) or Parent Squadron/IMA) supporting the ship classes.

f. Plans and executes the ship's scheduled availabilities and planned work packages by retrieval of all scheduled PMRs, alterations, Type Commander (TYCOM)-directed and local support routines from the MJC/PMR module and all screened deficiencies from the tended ship's CSMP into the Master CSMP of the central facility.

g. Manages the execution of all authorized work, ensuring the progress, status change, delay and completion of each task is reported into 3-M as detailed in the applicable program user manuals.

h. Produces and distributes PMR, CSMP and production information (Availability Summaries, Key Event Schedules and Progress, AWRs, Calibration Summaries, CSMP Summaries, etc.) as specified by TYCOM directives.

i. Distributes Maintenance Data System (MDS) information from NAVSEALOGCEN to the applicable program managers and SYSCOM/fleet support activities for analysis and upgrade of CMPs, technical specifications, mandatory parts replacement requirements, affirmation/adjustments of Lead Work Center/Assistant Work Center (LWC/AWC) and task/keyop man-hour averages and standards for recycling MJC and PMR improvements.

j. Manages the distribution of information between central activities and the organizational calibration and scheduling systems to support accomplishment of shipboard PMRs (e.g., Submarine Operational unrestricted operations (URO)

requirements and gage calibration by certified Field Calibration Activity (FCA) personnel.)

k. Adds all Test and Monitoring System (TAMS) installed equipment records into the SCLSIS of the Class CDM so that cyclic requirements are tailored to the operating platform and the PMR scheduling record updated.

l. Adds all portable TAMS to the SCLSIS for control by SPAWAR/NAVSEASYSCOM Item Managers supported by Naval Weapons Assessment Division and Metrology Calibration (METCAL) organizations. This process:

(1) Increases the management of portable TAMS inventory control between the METCAL CDM and the fleets central activity PMR Configuration.

(2) Increases the management of alterations for portable TAMS applying business rules to justify upgrade. Controls TAMS alterations in the same manner as ship alterations (SHIPALTs) and TYCOM alterations (ALTs).

m. Provides information necessary to evaluate and improve reliability, maintainability, and availability of installed systems and equipment while eliminating periodic requirements whose material condition assessment (MCA) indicates little risk of equipment failure.

C-4 MASTER JOB CATALOG (MJC)

The MJC is a collection of recurring jobs applicable to multiple supported units.

a. These jobs typically consist of PMRs from the CMP; PMRs for inspection, test, calibration, and repair of various equipments; alterations; recurring Board of Inspection and Survey (INSURV) deficiencies; routines for IMA services; and depot routines for interfacing the CSMP with the Ship Alteration and Repair Package (SARP)/Overhaul Work Package (OWP).

b. There are many advantages of using jobs from the MJC. Use of the MJC reduces the documentation burden for ship's force in preparing deferrals for recurring maintenance actions. MJC preplanned jobs reduce the planning effort required by the IMA Planning & Estimating (P&E). Planning information is usually recorded for the MJC jobs. In addition, it reduces the variability in job accomplishment. This is contributed to the consistency of job requirements for each repetitive use of the

MJC job. MJC jobs provide a ready vehicle for recording lessons learned as the job is accomplished time after time.

C-4.1 Use of the MJC

The MJC is structured as a CSMP deferral and planning record. The MJC describes mandatory maintenance requirements, CMP periodic requirements, IMA support routines, alterations, hazardous material (HAZMAT) procedures, calibration routines and other SYSCOM and TYCOM directed maintenance requirements applicable to one or more ship classes. The TYCOMs provide some MJC jobs, while individual IMAs prepare others.

In addition, each central maintenance activity may establish additional service routines to account for production-oriented work not otherwise covered by TYCOM direction. These periodic or repetitive requirements are retrieved from the MJC and added to an individual ship's Master CSMP for assignment to IMA and depot work packages.

Application of the MJC prior to and during a ship's availability relieves ship's force from documenting other than its own discovered deficiencies. The onboard automated CSMP need contain only these deficiencies, while the MJC retrieved requirements (and the ship's reported deficiencies) are maintained on a Master CSMP by the RSG, squadron or other central fleet activity.

C-4.2 Control of MJC

TYCOMS will establish joint instructions to identify common MJC requirements and standard procedures for its distribution and maintenance. The intermediate maintenance management automated systems user manuals describe methods to retrieve periodic requirements from the MJC to the individual availability work packages.

A TYCOM designated activity (Submarine Maintenance, Engineering, Planning, and Procurement (SUBMEPP) and/or other planning activity) may be assigned to maintain and distribute the MJC files to applicable fleet sites, and to provide analysis and improved planning and estimating, and material requirements for each documented MJC requirement.

All periodic requirements established by the SYSCOMs for a ship class should include the repair parts required and the forecast to the Navy Inventory Control Point (NAVICP) Mechanicsburg to build an effective load list over the projected life cycle of the ship class. The SUBMEPP/planning activity should provide

quarterly files to sustain the conjunctive Automated Material Requisitioning (AMR) for CMP projections.

C-5 3-M PERIODIC MAINTENANCE REQUIREMENTS

There are certain equipment and components in the fleet that require periodic maintenance such as tests, inspections, repairs, restorations, and replacements. With select automated systems, periodic maintenance tasks and routines are maintained on file with planning information. The record containing both the routine, test, etc., along with the scheduling and planning information is called a PMR.

C-5.1 Use of PMRs

Use of PMRs provide for the management of configuration and scheduling information for each equipment requiring periodic maintenance. As PMRs are established for an equipment, ship's force submits the related configuration and scheduling information. This information is used to establish a MJC routine. The MJC routine will be added to the CSMP when the equipment is due for periodic maintenance as indicated by the scheduling information. MJCs can be scheduled for accomplishment by ship's force or by an intermediate or depot level activity.

C-5.1.1 Configuration and Scheduling PMR Data

Both configuration and scheduling data files may be provided and downloaded from the CDM, SUBMEPP/planning activity, NSWC METCAL TAMS or from other SYSCOM or contractor sources supporting fleet maintenance. Ship's force may be required to initially document items for addition to the PMR database as directed by TYCOMs when the items require periodic testing, calibration or inspection by an intermediate level shop or fleet support team, electrical safety inspections, cyclic zone inspections by Damage Control teams vice sustaining a PMS Equipment Guide List (EGL) and requiring the ship to submit IMA work requests).

Detailed operating procedures for MJC and PMR are contained in Shipboard Non-Tactical ADP Program (SNAP) Central Design Activity (CDA) User Manuals and guides; these procedures are not repeated in this manual.

C-5.1.2 Modified OPNAV 4790/CK Form for PMR

The OPNAV 4790/CK (PMR) (Figure C-1), commonly referred to as a PMR CK is used to manually document an addition, change or deletion to a PMR Configuration and/or Scheduling Record. The PMR CK form must be locally reproduced. The manually prepared

PMR CK is used when direct access to the automated system is not available for on-line entry. The original 3-M data elements for configuration reporting (Blocks 1 through 30) of the OPNAV 4790/CK form are retained. Additional data elements (fields) have been added to the form and in the automated systems for scheduling information required to link this data with the appropriate configuration record.

C-6 PMR REPORTING

PMR records and related equipment/component information can be maintained in the PMR/MJC system. Configuration file entries can be made on-line if the capability is there, or can be entered manually on a modified OPNAV 4790/CK. The modified CK, referred to as the PMR CK, is used to document configuration file entries to add, change or delete an equipment to the PMR inventory. Standard 3-M data elements (Blocks 1 through 30 or the OPNAV 4790/CK) is used for PMR configuration reporting. For additional information/data element definitions and approved values refer to the data element by name in Appendix A of this instruction.

NOTE:

For the following data elements, if a data element has been officially assigned a Data Element Number (DEN), the DEN will be listed.

A single block at the top of the form is used to specify that a configuration file correction "CONFIG FILE CORR" is being documented.

SECTION I - JOB IDENTIFICATION

This section is pre-filled except for the ship's UIC. The PMR "Work Center" can be tailored for different management programs by using a different suffix for each program LCM Code. The Job Control Number and Job Sequence Number ("JCN JSN") remains "0001" until the page count (number of adds) exceeds 9999, at which time the JSN will be changed to "0002" for the next 9999 page numbers. For example, NAVSEA Mechanical TAMS components use LCM code "HM" while SPAWAR Electronic TAMS uses "ET". A ship's PMR installation could use PMHM0001 and PMET0001 for up to 9999 components for each LCM. The total JCN for an initial "ADD" PMR item is then converted to reflect the PMR assigned line item number (LIN) as part of the Work Center (WC/JSN) (e.g., PM001454 - where 001454 is the LIN) to become the permanent JCN for the life of the component on the UIC.

Block A SHIP'S NAME
Block B SHIP'S HULL NUMBER
JOB CONTROL NUMBER (Blocks 1 - 3):
Block 1 SHIP'S UIC (DEN A002): UIC of the customer unit/ship of installed equipment.
Block 2 WORK CENTER (DEN E128): The PMR LCM code designated by the TYCOM.
Block 3 JOB SEQ. NR. (DEN E349D): The JSN is pre-filled with "0001" until the number of "adds" (pages) exceeds 9999. The JSN is then changed to "0002" for the next 9999 "adds".
Block 4 ALTERATION IDENTIFICATION (SHIPALT, FLD. CHG., ETC.): Masked out in the automated system. Leave blank for PMR.
Block 5 EIC: EIC for the equipment identified. This EIC may be the general service code (U series) if the PMR is for support service of multiple systems. (These Service EICs may be used in combination with the primary IMA Work Center e.g., U60067B, U60096A, U60067F, etc.).
Block 6 ACT. TKN: Action taken is masked out or pre-filled as specified by TYCOM instruction.
Block 7 EQUIPMENT NOUN NAME: Pre-filled as specified by TYCOM instructions to describe the general category of the PMR management program.
Block 8 S/F MHRS. EXP.: Ships' Force Man-hours Expended. Field is masked out in the automated system. Leave block blank if using the form.
Block 9 ACT. MAINT. TIME: Actual Maintenance Time. Field is masked out in the automated system. Leave block blank if using the form.
Block 10 COMP. DATE: Completion Date. Field is masked out in the automated system. Leave block blank if using the form.
Block 11 M/R (Meter Reading): Masked out.

SECTION II - JOB DESCRIPTION/REMARKS

This section describes the appropriate management program being documented with PMR.

Block 12 JOB DESCRIPTION/REMARKS: Information/remark identifying the PMR management program as directed by TYCOM instructions.

SECTION III - COMPONENT CONFIGURATION INFORMATION

This section records the PMR related equipment configuration/identifying information specific to the component. Note that PMR is not limited to supply worthy components but is used to also manage all cyclic maintenance worthy items (e.g., pad eyes, slings, hoists requiring weight tests can be added to PMR to ensure inventory and scheduling control as can damage control lockers and fire hose valve stations).

Block 13 COMPONENT NOUN NAME (DEN E224). For Hull, Mechanical, and Electrical Equipment (HM&E), the component name entered along with a descriptive nomenclature (e.g., Valve, Ball 3.5" MSW; Gauge, 0-50psi Lube Oil Pump). For electronic components and test equipment, the AN nomenclature Joint Electronic Type Designation System (JETDS) or commercial model number is entered. Prefix the model number with the Commercial and Government Entity (CAGE) and a dash. For ordnance components, enter the system/equipment nomenclature, followed by the Mark and Mod.

Block 14 QUANTITY (DEN DO1l) (CK limits 001-999, pre-filled with 000). This quantity will usually be 001, but if multiple items are to be tested or calibrated as a batch job, enter the contained quantity. For example: 100 Radiation Detection, Indication, and Computation (RADIAC) for a ship may be contained in four boxes of 25 each, resulting in four separate line items - each with a 025 in block 14. For IMA Electrical Safety, all receptacles in a single shop may be counted as one line item and the total quantity shown in Block 14. This would necessitate testing all of them at one time.

Block 15 COMPONENT ACTION (DEN E033). If the item is not in the PMR INVENTORY, enter an "A" (add). Otherwise enter "C" (correct the record), or a "D" (delete the inventory line item).

Block 16 COMPONENT IDENTIFICATION (DEN E093). Enter the Valve Mark/Electric Symbol Number (VM/ESN) or other identification. For inventory items controlled by an LCM, this identification would be retained as originally assigned. For Director Strategic Systems Project Office (DIRSSPO) controlled weapons handling gear, the identification number must be a "PMMP~~ (Pink Ticket) number. Once assigned, this element cannot be changed or corrected. For weight handling gear, include the safe working load in pounds prefixed by SWL (e.g., TP16SY SWL 6800). SCLSIS

defines this element as " Positional Reference Identification -PRID .II

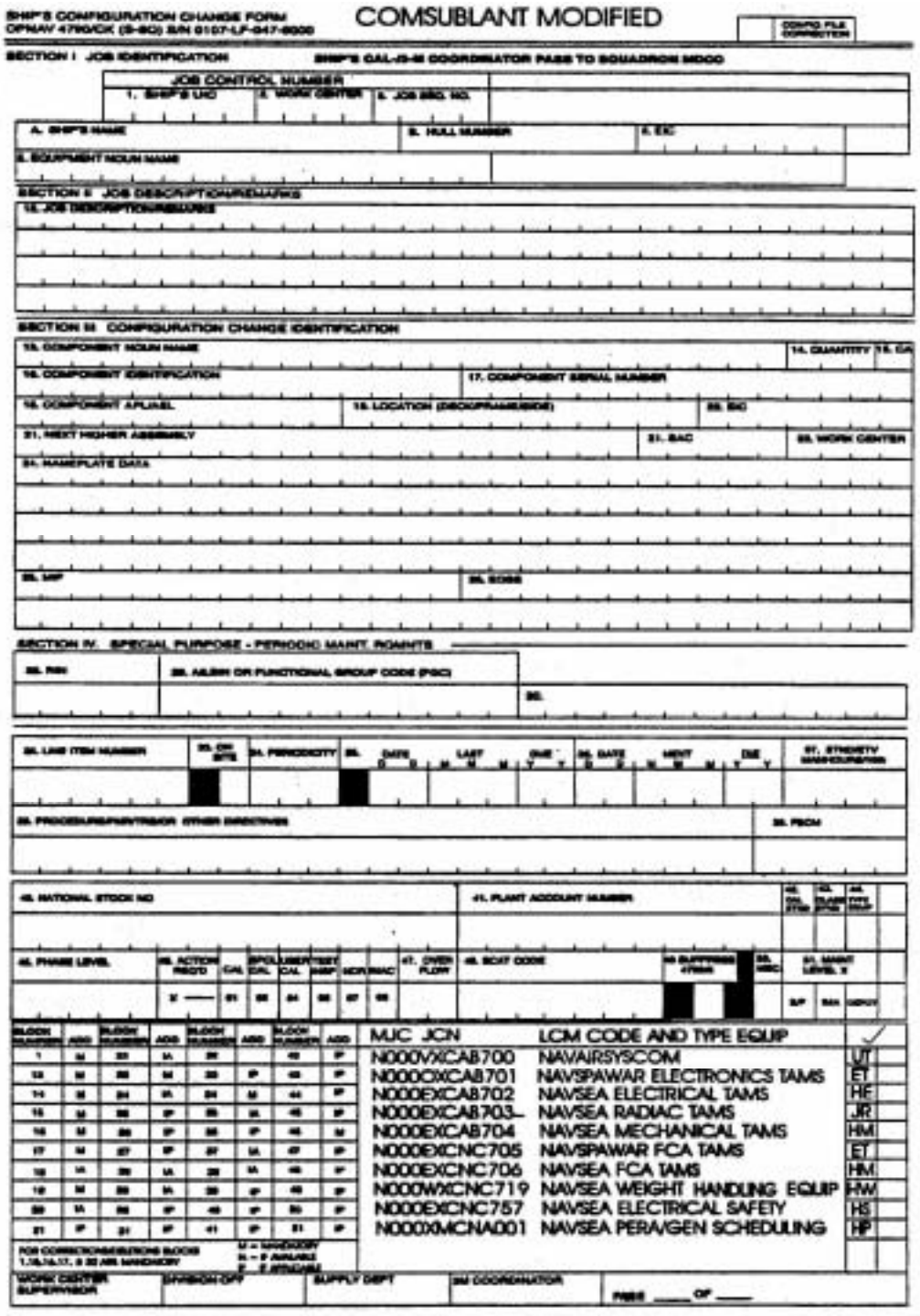

SHIP'S CONFIGURATION CHANGE FORM
COMSUBLANT MODIFIED
SECTION I JOB IDENTIFICATION
SHIP'S CAL/S-M COORDINATOR PASS TO SQUADRON MDCO
JOB CONTROL NUMBER
SECTION II JOB DESCRIPTION/REMARKS
SECTION III CONFIGURATION CHANGE IDENTIFICATION
SECTION IV SPECIAL PURPOSE - PERIODIC MAINT. ROUNTS
MUC JCN
LCM CODE AND TYPE EQUIP
N000VXCAB700 NAVAIRSYSCOM UT
N000CXCAB701 NAVSPAWAR ELECTRONICS TAMS ET
N000EXCAB702 NAVSEA ELECTRICAL TAMS HE
N000EXCAB703 NAVSEA RADIAC TAMS JR
N000EXCAB704 NAVSEA MECHANICAL TAMS HM
N000EXCNC705 NAVSPAWAR FCA TAMS ET
N000EXCNC706 NAVSEA FCA TAMS HM
N000WXCNC719 NAVSEA WEIGHT HANDLING EQUIP HW
N000EXCNC757 NAVSEA ELECTRICAL SAFETY HS
N000XMCNA001 NAVSEA PERA/GEN SCHEDULING HP

Figure C-1: Modified NAVSEA 4790/CK Form

NOTE:

The two data elements of the OPNAV 4790/CK Blocks 16 (Component Identification) and Block 17 (Component Serial Number) becomes a single data element in Block 13 (Identification Equipment Serial Number) of the OPNAV 4790/2K used for reporting corrective maintenance. The PMR program selects the Component Identification from the configuration change (Block 16) and pre-fills this number in the Identification Equipment Serial Number field.

Block 17 COMPONENT SERIAL NUMBER (DEN D032). If the nameplate serial number is not available, a number assigned by the owning ship will be entered. The ship's UIC (Block 1) and owning work center (Block 23) are separately shown on the PMR reports and in the system; there is no requirement to repeat the hull number and work center as part of the serial number. Weight handling equipment must be marked or tagged with the hull number (equal to the UIC) and the serial number of the component. The combination of blocks 1, 16, and 17 must not be duplicated in the PMR configuration file. If there are multiple PMRs for the same item, the additional requirements must be identified by separate MJC numbers.

NOTE:

For SUBMEPP/CDM. When a commercial serial number is not assigned, record the unique functional group code (FGC) in this field and in the ship equipment file (SEF).

Block 18 COMPONENT APL/AEL (DEN DO08). Enter the Component Allowance Parts List/Component Identification Number/Repairable Identification Number (APL/CID/RIC). If there is no APL/AEL (Allowance Equipage List), enter NOT LISTED. For SUBMEPP inventory, when NOT LISTED is entered, the tenth and eleventh position must contain a number from 01-99 for interface with the Automated Material Requisitions (AMR) program. This is required to allow different components with the same MJC/PMR to be provided with separate "Bills of Material" for automatic call out.

Block 19 LOCATION (DEN E052). (Preliminary Equipment Index Location). Enter the location of the item. For inventories being converted by LCMS, if the location

is not available, enter the customer's (ship's) work center and a question mark (e.g., "EEO1?").

Block 20 EIC (DEN DO08D). Enter the components EIC. The EIC entered in Block 5 may be a General Support Code (U series EIC) or a System/Sub-System Code. The component EIC, when identified in the 3-M EIC Manual, should identify to the component being added to the configuration file.

Block 21 NEXT HIGHER ASSEMBLY. Enter the Equipment/System Designator (ESD) (DEN T058) or other identity of the system/sub-system.

Block 22 SAC (DEN EO1OA). Enter the Service Application Code (SAC) from the Coordinated Shipboard Allowance List (COSAL)/SCLSIS source if available. Note that it is a five character element on the OPNAV 4790/CK form but 10 characters in the automated system. LCMS should interface with NAVICP Mechanicsburg to obtain the ten character element.

Block 23 WORK CENTER (DEN E128). This is the 3-M code of the customer maintenance work center required to maintain the component. If a Work Center Responsible for Compartment (WCRC) DEN 127)) code is also available in the LCM inventory, enter it. SUBMEPP use MJC WC with last two characters of 01 (e.g., EACC=EAO1).

Block 24 NAME PLATE DATA. Use to describe any other characteristics not covered by other elements. This data will not display on reports but will be accessible in the program. For SUBMEPP it will be the CSMP Summary from the individual MJCS assigned to the PMRS .

Block 25 PMS MAINT INDEX PAGE (MIP). Enter the PMS MIP if available. PMS MAINT INDEX PAGE (MIP). Enter the PMS MIP if available.

Block 26 EOSS . If applicable, enter the Engineering Operational Sequencing System (EOSS).

Block 27 TECHNICAL MANUAL NUMBER. If available, enter the TM number, otherwise enter NA.

Block 28 RIN (DEN E221). If the component is listed in the COSAL or the SCLSIS, enter the Record Identification Number (RIN). If not available, the program will assign a temporary RIN as a permanent data element until changed by the SCLSIS CDM external interface. For automated ships, first review the SEF for the component's RIN.

Block 29 AILSIN/FUNCTIONAL GROUP CODE (DEN T063). If the Automated Integrated Language System Identification

Number (AILSIN) is not available, enter the Ship Work Authorization Boundary (SWAB) or Ship Work List Item Number (SWLIN), if known. TRIDENT applications will contain the FGC in lieu of AILSIN. Other class submarines use SWAB, other type ships use Expanded Ship Work Breakdown Structure (ESWBS).

Block 30 SPECIAL PURPOSE - These requirements are TYCOM directed and are provided by the TYCOM supporting activity (SUBMEPP/PERA).

The following are PMR requirements for SUBMEPP LCM. These requirements, if applicable, are provided by SUBMEPP. If the local site determines that changes are required, additions may be made. Deletions must first be coordinated with SUBMEPP.
Block 30A SS. Use “X” if the component is submarine safe (SUBSAFE).

Block 30B Use an "X" if the component is LEVEL 1.
Block 30C NL1 . Use an "X" if the component is NUCLEAR LEVEL 1.
Block 30D NDT. Use an “X” if the component requires NON-DESTRUCTIVE TEST.
Block 30E NWP. Use an "X" if the component requires NUCLEAR WORK PROCEDURES.
Block 30F SAED. Use an “X” if the component requires SUB ANTENNA ENGINEERING DIVISION.
Block 30G SAED. Use an “X” if the component requires SUB ANTENNA ENGINEERING DIVISION.
Block 30H ST. Use an "X" if the component requires SPECIAL TESTING.
Block 30I Use an “X” if the component requires SPECIAL IDENTIFICATION.
Block 30J NC. Use an “X” if the component is NOISE CRITICAL.
Block 30K RAD. Use an “X” if the component requires RADIOLOGICAL CONTROL.
Block 30L OC. Use an "X" if the component requires OTHER CONTROLS.
Block 30M D/D. Use an "X" if the component requires DRYDOCKING.
Block 32 LINE ITEM NUMBER. This element is assigned by the program when items/components are added to the system. The LIN is unique to the configuration file for each customer UIC and is retained until the record is deleted from the ship’s inventory.

NOTE:

This line item number preceded by PM becomes the permanent 3-M Work Center and JSN. Subsequent changes made to the record are reported upline as a corrected CK using this permanent JCN. In addition, changes to the scheduling record and to the Calibration Laboratory (Cal Lab) production record are reported upline with the same permanent JCN to support the MEASURE integration into 3-M. Note that the LIN plays the same role as the RIN for "non-supply worthy" items.

Block 33 ON SITE. If the component being calibrated/tested cannot be delivered to the Testing Work Center (TWC) because of location, size, etc., enter a "Y" to show the TWC must calibrate on-site. Otherwise leave this field blank. Leave blank for Submarine Extended Operating Cycle (SEOC) PMRs relating to installed HM&E.

Block 34 PERIODICITY. Enter the number of months between calibration/testing or other PMR cycles. If the requirement is situational, see Block 45.

Block 35 DATE LAST DONE. Enter the date (DDMMMYY) the PMR was last accomplished (e.g., 05FEB00). For EPP, if the PMR has never been done because the periodicity has not exceeded the months since commissioning, construction, overhaul; enter this event date if the PMR authorizes. If the PMR is for test equipment/slings/portable tools that have not previously been calibrated/inspected, the PMR must be accomplished prior to first use. Block 35 will be entered by the TWC.

Block 36 NEXT DUE DATE. Enter the date (DDMMMYY) the PMR is next due for accomplishment (e.g., 27JUL00). This data element is calculated and reported upline by the automated program when the PMR is reported completed by the TWC.

Block 37 STND/ETV Man-Hours - TENTHS. If the component PMR has a standard, engineered time value, or historically based man-hour estimate, it should be provided by the LCM/NAVSEA for the initial download or subsequent Automated Shore Interface (ASI) process. This element is not for expended man-hours reported when the PMR is accomplished.

Block 38 APPROVED PROCEDURE. Enter the procedure, periodic maintenance requirement, technical repair standard or other directive used during the required action on the component. SUBMEPP should not repeat the

Integrated Maintenance and Modernization NUMBER in this block as it is planning record.

NOTE:

This entry is displayed in the last Program (IMMP) P~ included in the MJC column of the PMR report. This information may be used as an update record to show such information as the name of the per-son conducting the test/calibration, or the measurement of the gear. Once entered, it will display on subsequent reports until changed when next tested.

Block 39 CAGE (DEN C035). Enter the Commercial and Government Entity (CAGE), if applicable.

Block 40 NATIONAL STOCK NUMBER (NSN). Enter the NSN, if applicable, or the LCM assigned number used for procurement/replacement/supply action.

Block 41 PLANT ACCOUNT NUMBER. Enter the plant account number if applicable. This usually applies only to shore activity permanent/fixed equipment.

Block 42 CALIBRATION STANDARD. Enter a "Y" if the component is used as a measurement standard for calibrating or testing other test equipment, otherwise leave blank.

Block 43 CLASS STANDARD. To identify the source/type of man-hours/tenths for Block 37. A = Engineered, B = Historical, C = Estimated.

Block 44 EQUIPMENT TYPE. Enter the functional category of the equipment. 1 = Electronic; 2 = Coaxial/ Microwave; 3 = optical/Dimensional; 4 = Physical/ Mechanical; 5 = Electrical; 6 = Special Support. These are for LCM Measurement Equipment. Additional codes and other categories will be established by other LCMS.

Block 45 PHASE LEVEL. For measurement equipment (SUBMEPP or CMP events) if applicable, enter an asterisk plus the four digit KEY EVENT code describing the situational requirement.

Block 46 ACTION REQUIRED. Primarily calibration codes are entered. For PERA and weight handling components, use Code 06 TEST/INSP.

Block 47 OVERFLOW INDICATOR. For measurement (TAMS), the IMA lab may use a two character code to identify a specific shore facility. A similar code may be used for SUBMEPP to identify components requiring off site assistance teams.

Block 48 SCAT CODE. For Ships Portable Electrical/Electronic Equipment Requirements List (SPETERL) TAMS. The LCM should provide the subcategory code. Not applicable to other equipment.

Block 49 SUPPRESS LANTFLT 4790/6 (if applicable). A custody receipt is provided to the customer when test equipment or other portable components are delivered to the Cal Labs. This form is not required for other categories of equipment. Enter a "Y" to prevent printing of the custody receipt. Enter an "N" for all test equipment having to be delivered to the Cal Lab. This causes the printing of a four-part custody receipt when the component is due for calibration. When the PMR is run at the beginning of each month, the computer will generate the PMR DUE/OVERDUE/INVENTORY REPORT for the customer ship and the Cal Lab. After generating the Cal Lab reports, the system will print the LANTFLT 4790/6 for each DUE component.

NOTE:

These LANTFLT 4790/6s must be delivered to the Cal Lab and These not to the customer ship with the recall reports.

Block 50 MEC-VITALITY CODE. Mission Essential Code V = Vital. For SUBMEPP use codes reflected in EOC IMMP/URO/LID. Use only if required and furnished by LCM. IMA Work Center. Enter the 3-M Intermediate Maintenance Activity Repair WC code of the Cal Lab or Testing WC. This is obtained from the MJC planning record.

Block 51 MAINTENANCE LEVEL. From the CMP, used to identify where PMR will be performed: Organizational (0), Intermediate (I) or Depot (D). Additional data elements used in PMR as part of the Configuration/Equipment Record, and for generating from one to multiple scheduling records for each equipment record file, are detailed in the NAVSEA Technical Specification Manual. Each scheduling record must be identified to a unique MJC JCN general requirement for multi-tasking.

The following are data elements used in creating scheduling records for MJC supported equipment. These elements are used with the automated processing of PMRs and do not have a correlating block entry requirement on the PMR CK form. For

additional information refer to TYCOM instructions and systems user manuals.

DATA ELEMENT Description/Entry Criteria

ALMAD
Identifies the ALMAD of the PMR component for calculating the Next Due Date. This is for SEOC IMMP/URO programs which adjusts the LMA date to the end of the availability.

EOSS
Assigned by the CDM if applicable to the PMR accomplishment.

FREQUENCY (DAILY, WEEKLY, MONTHLY, ETC.)
The periodicity frequency of the PMR. Used by SUBMEPP to identify SEOC events from the CMP. It should cross reference to scheduling of situational PMRs.

IMA WORK CENTER (DEN E902A)
The 3-M IMA Repair WC code of the Cal Lab or Testing WC. This is obtained from the MJC planning record. “FCA” is used for shipboard gage calibration.

INITIALIZATION NEXT DUE DATE
The CDM assigned date to identify when new requirements are to be scheduled for accomplishment. This date is required for implementing PMR on newly commissioned ships or when PMR components receive additional scheduling requirements. Format is YYMMDD.

LAST ACTION TAKEN
The Final Action Taken (FAT) code from the Completed automated work request. Date is retained on record. LAST ASSIGNED AVAILABILITY NUMBER (ANNN) Identifies the Availability Category and number in which the component PMR was last accomplished.

LAST ASSIGNED REPAIR ACTIVITY UNIT IDENTIFICATION CODE (RAUIC)
This RAUIC identifies the IMA last accomplishing the component PMR.

LAST JCN REFERENCE
The WC and JSN of the last reported JCN that accomplished the PMR. The intermediate maintenance management automated systems include retention of the last JCN and Availability Number in the PMR Scheduling file for determining the Adjusted Last Maintenance Action Date (ALMAD).

LIFE CYCLE MANAGER CODE (DEN E137)
The LCM code assigned to the MJC planning record and as shown in the modified OPNAV 4790/CK (PMR CK). Note that the one character code from COSAL Maintenance Manual is

expanded to two (with an optional suffix). This allows identification of multiple functions within the SYSCOMS.

LIFE CYCLE MANAGER CODE SUFFIX (OPTIONAL)

MAINTENANCE ACTION CODE LITERAL

The four character literal to describe the required PMR. Calibrate = CAL, Special Calibration = SCAL, User Calibrate = UCAL, Test or Inspection = TEST, No Cal Required = NCR, Inactive = INAC.

MASTER JOB CATALOG NUMBER

Enter the MJC number from the bottom of the modified OPNAV 4790/CK (PMR CK) or from the TYCOM MJC Index.

PERIODIC MAINTENANCE REQUIREMENT (PMR) NUMBER

The PMR number as recorded on the MJC planning record (OPNAV 4790/2P) and as identified in the CMP.

RAUIC FINAL ACTION TAKEN (FAT) CODE

Identifies the FAT reported by the RAUIC for the component PMR.

SCHEDULED SHOP CODE

Identifies the IMA Cal Lab or other primary LWC to accomplished the PMR. For TAMS, use 51C, 67B, 67F, 96A, and FCA.

SCHEDULED RAUIC

Identifies the planned RAUIC for accomplishing PMR calibrations and other actions.

SELECTED EQUIPMENT LIST INDICATOR (SEL)

An “X” is used if CDM has indicated Meter Readings or Specialized Reporting.

SITUATIONAL REQUIREMENT KEY EVENT CODES

For scheduling PMRs to be done during non-cyclic situational events (e.g., calibrate tank level indicators whenever tanks are opened). These event codes are assigned by the CDM or supporting activity for CMP requirements.

SPECIAL HANDLING REQUIREMENTS

A series of codes and definitions to be assigned as agreed between the TYCOM, Platform Manager and designated CDM for TAMS and other PMR components. A total of eight codes may be defined for each ship type. Four codes are reserved for the following:

A= POTENTIALLY RADIOACTIVE CONTAMINATED
B = REACTOR PLANT CLEAN REQUIREMENT
C = STEAM PLANT CLEAN REQUIREMENT
D = OXYGEN CLEAN REQUIREMENT

SYSTEMS CALIBRATION (SISCAL) CALIBRATION REQUIREMENTS LIST (CRL) INDICATOR

Reserved for use as an interface to indicate PMR is to be performed by NAVSEA Team.

VERSION ISSUE DATE (DEN D917A)

The Julian Date (YDDD) of the original MJC JCN deferral.

C-7 MASTER JOB CATALOG (MJC) INTERFACE WITH PMR

The MJC and PMR integration provides management of many other maintenance applications including all Class Maintenance Plan requirements, electrical safety and weight handling safety requirements, PMS requirements calling for IMA support, periodic inspections of reduced instruction set computing (RISC) and flexible hoses, IMA testing of system relief valves, IMMP/URO submarine requirements, tracking of multi-phase alterations and corrosion control management.

The decision to manage these cyclic requirements as single or multi-task requirements is usually determined by the scope of the task, and if a single work center can accomplish the task or whether multiple work centers will be required.

C-7.1 TAMS Calibration

PMR provides the TAMS community with inventory management, calibration scheduling management and calibration results reporting capabilities. TAMS categorizes equipment requiring calibration and weight testing periodic maintenance. The MJC supports TAMS equipments and the special IMA Routines required to support calibration and weight test periodic maintenance requirements that are to be accomplished during scheduled availabilities. The lab assigned responsibility for calibration and repair along with the work centers responsible for accomplishment are provided in the MJC.

a. PMR tracks all due and overdue TAMS of each MJC category. For each periodic requirement that needs to be accomplished, PMR creates a single deferral for each scheduling record. This assists the Cal Labs in identifying all items requirement periodic test, monitoring/calibration to be identified to the customer ship and the IMA lab.

b. When the items are delivered to the lab, PMR will track delivery, progression, status, completion and pick-up of each piece of test equipment. The Master CSMP will display within the single deferral all of the due/overdue items by line item, model, serial and nomenclature.

c. As each task (TAMS item) is completed, the expended man- hours are accumulated against the production AWR and the detailed reporting of hours, delays, parts usage, out-of-tolerance readings and standards being used are recorded and upline reported. This information is also retained in the PMR

so that the Cal Labs have an on-line history of each ship's TAMS.

d. When the availability is completed (or optionally the Automated Work Request (AWR) can be created each month or quarter and be closed at the end of the period), the AWR is signed off for processing. A special record is automatically created for each item calibrated against the single CSMP JCN.

e. If any unscheduled TAMS items are delivered by the ship, the Lab (or TYCOM designated support activity) need only to access the PMR record and add it to the outstanding AWR.

f. The Cal Lab can call out a standard REPAIR routine for the specific lab and PMR item. For example, if Lab 67B cannot calibrate one of the 150 items, the unique MJC JCN with the item data from PMR is retrieved against the repairable item. This REPAIR routine assigns 67A (Electronics Repair) as the Assist Work Center and 67B inputs the defective item to 67A.

C-7.2 Standard MJC Routines for TAMS Calibration and Weight Testing

The "PMR WC" entry of the MJC standard routines identify the specific Logistic Manager Code for each category of TAMS. ET = SPAWAR Electronics, JR = NAVSEA RADIAC, etc. A "2" causes multiple task (line items) per single AWR, and the "MC" is the special suffix assigned to the Master CSMP deferral from the MJC.

From the MJC routine record, a PMR WC entry adjacent to the REPAIR MJC will create one item per AWR. This item will have a unique WC suffix - "CR" for Cal Repair. This allows retrieval of all TAMS repair history from NAVSEALOGCEN by keying on the JCN WC suffix or by MJC JCN which is contained in Block 18 of each MJC-originated CSMP deferral. The LCM code is included on each PMR detailed record reported to NAVSEALOGCEN via 3-M.

Lab	MJC for Cal	PMR WC	MJC for Repair	PMR WC
51C	N0000EXCAB702	HE2MC	N0000EXCAE702	HE CR
67B	N0000OXCAB701	ET2MC	N0000OXCAE701	ET CR
67F	N0000EXCAB703	JR2MC	N0000EXCAE703	JR CR
72D	N0000WXCNC719	HW2MC	N0000WXCNE719	HW CR
96A	N0000EXCAB704	HM2MC	N0000EXCAE704	HM CR
FCA	N0000EXCAB706	HM2MC	N0000EXCAE706	HM CR

C-7.3 Other Automated System in Support of PMR

Other automated systems and system programs interface with the MJC and PMR programs. Refer to TYCOM instructions and system user manuals for particular system capabilities and requirements.

C-8 USING MJC JCN STRUCTURE TO MANAGE PROGRAMS

The MJC File is created and managed the same as the CSMP file. Each "deferral" is a requirement or special work request (for service, scheduling of alterations or specialized CMP requirements, etc.) which is copied to a CSMP or work package. The method by which many different programs can be added to a single MJC is by control of the MJC JCN. In documenting an MJC, there are exceptions to the standard documenting procedures for a CSMP deferral (OPNAV 4790/2K) as described in other chapters.

C-8.1 Fleet/TYCOM/Local Site MJC Control

BLOCK 1 UIC. The first character defines the MJC Manager Code and identifies the activity responsible for the MJC item. It is assigned by the TYCOM. This same code is used as a prefix to the MJC JSN log. The following restrictions apply to the use of MJC Manager Code.

A - Not used. Reserved for foreign ship UIC identity.
I - Not used. To avoid confusion with numeral 1.
O - Not used. To avoid confusion with numeral 0.
Q - Not used. To avoid confusion with numeral 0.
N - Used for MJC items issued and controlled by TYCOMs.
M - Used for MJC items issued and controlled by the Fleet CINC.

a. When MJC items are added to a ship's CSMP, the program adds the original MJC JCN (with an "M"-MJC-prefix) to the "ALTERATION (Block 18)" data field. This allows the 3-M history at NAVSEALOGCEN to be queried relative to man-hour and material cost expenditures. A single calibration routine can provide (by individual ship, RAUIC, type of ship, etc) total cost per TYCOM

for each and all electronic calibration labs for specific periods of time. In addition, the associated Repair routine will identify each unique piece of TAMS repaired during the same period.

C-8.2 Applicability UIC Control

BLOCK 1 UIC. The remaining four characters of the MJC UIC identify MJC categories and the type of ships to which they apply.

0000	All Ships	0001	All Surface Ships
0002	All SSNs	0003	All SSBNs
0006	SSN/SSBN	0007	AEGIS CRUISERS
0100	ALTS AS/AD	0210	ALTS SSBN
0230	ALTS SSN	4020	SSN OVERHAUL ROUTINES
5000	TRIDENT UNIQUE	5100	SEA WOLF UNIQUE

For each MJC UIC, there must be a corresponding UIC control record added to the master file.

C-8.3 MJC WC Designations

a. BLOCK 2 WC. The left two letters identify the shipboard department and division to which the item normally applies. If a specific division is not applicable, use "X". When the MJC item is for multiple departments, use "E" for Engineering.

b. The third and fourth letters identify the maintenance category and its source.

(1) When the third letter is a "C" (a corrective maintenance directive or periodic service routine item), the fourth letter will identify its source as follows:

Code	Source of Directive
A	PLANNED MAINTENANCE SYSTEM (PMS)
F	NAVSEA
H	SPAWAR
M	CINCLANTFLT/CINCPACFLT
I,O,Q	NOT USED
OTHER	RESERVED FOR TYCOM USE

(2) Other combinations of the third and fourth letter may be used to identify other categories as directed by TYCOMs.

c. When the MJC item is an alteration controlled through a TYCOM alteration management system or the Fleet Modernization

Program Management Information System (FMPMIS), the first letter will identify the shipboard department, the second letter will be "X" and the third and fourth letter will identify the type of alteration (SA, TY, etc).

(1) The combination WC and JSN will be assigned by the alteration issuing authority and is displayed along with the structured alteration number on the alteration issuing directive.

(2) The structured alteration number must be recorded in Block 18 of the MJC deferral exactly as described in the AMS chapter. This provides for an error free Alteration Record being added to the ship's CSMP and provides for the necessary 3-M to FMPMIS completion status feedback. Because Block 18 is prefilled, the MJC JCN will not be copied into that field in the CSMP. However, the AMS WC/JSN will be assigned as the ship's WC/JSN. This same combination must be reported on the completed OPNAV 4790/CK Configuration Change Record rather than a shipboard assigned WC/JSN.

(3) An additional restrictive WC/JSN combination is for tracking the standard depot overhaul routines which have an MJC WC of "EXSY" and are identified in OWP so that depot estimates and return costs can be reported to the SWLIN/ESWBS level and individual work center deferrals from the CSMP can be grouped and costed under the EXSY "bucket jobs". These standard EXSY routines retain the MJC WC/JSN when added to the CSMP and allows the ship's engineer and overhaul coordinator to track the overhaul progress by use of the CSMP. NAVSEASYSCOM (SEA 07) directed these procedures be followed by SUPSHIP and Shipyards when costing Departure Reports and to provide for depot 3-M reporting.

C-8.4 MJC JSN Prefix for Work Category

BLOCK 3. JSN. This entry is the sequence number of the item unique to the MJC "work center" code. It is usually all numeric, but there may be conjunctive or associated actions following an MJC inspection, test or calibration. If so, the total set should reflect a different alphabetic code as the first character of the JSN.

C-8.5 Documenting the MJC Deferral

The amount of detail within an individual MJC item is dependent on whether the action required is to provide IMA routines such as "Printing Services", specific non-scheduled refurbishment or repair for a recurring failure of a specific Allowance Parts

List (APL), standard procedure for docking/undocking ships, corrosion control inspections of piping, or PMR scheduling of individual components. Details will be provided by TYCOM directives.

C-8.5.1 Evaluating Requirement for Single or Multi-Task

When the MJC item is being created for general service routines, and is not to interface with PMR configuration and scheduling, follow the standard deferral documentation procedures and describe in the Remarks data field (Block 35 of the 2K) the actions required for the routine. An example entry may read "IMA provide sheet metal service. Limit to 1/8" thick metal. S/F provide sketch on OPNAV 2L. Maximum 100 man hours".

a. When the MJC item is written to interface with the PMR, the detail of the equipment or component is a function of the PMR configuration and scheduling records. When a single requirement requires a single JCN, data element fields for "Alterations" (Block 4), "Component Noun Name" (Block 13), and "Component Identification" (Block 16) of the MJC will contain an asterisk. The data will be pre-filled from PMR when retrieved into the CSMP. An individual work request (JCN) per component is appropriate when multiple work centers are to be involved in the requirement or when there is a requirement for controlled work procedures required by TYCOM Quality Assurance Procedures. For example:

(1) If there were 100 sea valves due for a 72-month refurbishment, 100 separate JCNs would be added to the CSMP.

(2) If there were a second requirement to visually check all sea valves for external corrosion every 24 months, an additional MJC item would be created and another PMR scheduling record would be added to each sea valve configuration record. In this situation, the MJC would be coded as multi-tasked and one JCN would be created with 100 tasks (1 task per valve). The above MJC calibration routines are all coded as multi-tasked.

C-8.5.2 Standard Narrative (Block 35)

Narrative should include a statement of the requirement and include notices to the tended unit and LWC on ship to shop or special controls. The deferral narrative is limited to 1200 characters. However, when the AWR is completed, an additional 1200 characters may be used by the LWC to provide feedback information (free-form) to the SYSCOM directing the requirement.

C-8.5.3 Structured Narrative (Block 35)

There are two types of structured narrative provided by MJC:

a. Certain inspection or test criteria are specified by the requirement in which the LWC/AWC is to feedback the material condition assessment by "yes/no" responses to conditional questions printed on the CSMP AWR. In these cases, the narrative will begin with a general statement of the requirement, followed by specific inspection conditions and a response space for "Y" or "N". For example: "Was there evidence of external leakage? ( ); corrosion? ( )."

b. Certain equipment are designated for specialized reporting by the LCM or item manager and the organization. Automated ships'/systems must flag the SEF to display the structured narrative specified and funded by the LCM. This requires the shipboard technician to enter "as found" readings and symptoms which are upline reported for SYSCOM analysis. If an extension of these specialized reporting requirements to the off-ship IMA technician is required, the PMR screen could display a similar format (refer to Appendix A, data element "REMARKS/DESCRIPTION" for Selected Equipment List (SEL) reporting requirements).

C-8.6 Documenting the MJC P&E

The OPNAV 4790/2P is used for MJC P&E with entries made as described in Appendix C except for the following:

SECTION I - PLANNING

Block A	SHIP'S NAME. Enter the "MJC ITEM".
Block B	HULL NUMBER. Leave Blank
Blocks 1-3	JOB CONTROL NUMBER: Enter the same JCN as assigned to the attached MJC 2K.
Block 4	PERIODIC MAINTENANCE REQUIREMENT NUMBER. If the MJC is for a PMR, enter the appropriate number from the CMP or other directive.

Block 5 PERIODICITY. If applicable, enter the periodicity of the requirement.

Block 6 YEAR AND MONTH ISSUED. Enter the date (YYMM) the PMR was established.

Block 7 SPECIAL DATA. The first two positions are to identify the LCM code controlling the PMR. These codes are listed in the lower right section of the OPNAV 4790/CK (PMR CK). The third position is for entering whether the MJC is to control single (1) or multi-component (2) JCNs. Leave blank if the MJC is for non-PMR service routines. The fourth and fifth position is to record a special program WC suffix to the output CSMP JCN (e.g., Submarine IMMP/URO/LID SEOC program is assigned "JC" as a suffix). If no entry is made, the output JCN will be assigned a WC suffix of "MC". Only alphabetic codes should be assigned to separate MJC retrieved deferrals from shipboard created deficiency deferrals.

Block 8 SCREENING ACTION: When authorized by TYCOM instructions, the MJC may be designated as preapproved. Entry of the screening code will cause the MJC retrieval to by-pass normal screening action and the JCN will be sent directly for release to the IMA for accomplishment.

Block 9 QUALITY ASSURANCE REQUIREMENTS (QA): Assign the QA requirements applicable to the MJC. The PMR scheduling record for individual components will take precedence during call-down.

SECTION II - SCHEDULING

Block 12 LEAD WORK CENTER (LWC): Enter the code of the LWC assigned to control the coordination and completion of the total JCN. When the MJC is for multi-component inspection/calibration/testing, the primary WC is assigned. When an associated "Repair" MJC is to be created, assign the same primary WC as LWC and other required WCS as assisting (AWC). To ensure standardization for IMA capabilities and continuity when transferring work packages, the TYCOM controlled MJC assigned LWC must not be changed unless approved by TYCOM instruction.

Blocks 13, 19, 25, 31, 37, and 43 as required:
SCHED START DATE: Enter a numeric value for the start day relative to the start of the availability. When the MJC is subsequently retrieved and added to the CSMP, the relative day will be added to the availability start date and output as a Julian date that each task is to be started by the LWC and any AWCs. Note that multi-component MJCs will not include AWC entries.

C-8.7 Establish Bill of Materials Interface

When the MJC is for refurbishment of APL identified components, the repair part requirements (both mandatory and conditional) are provided on magnetic media by the LCM or TYCOM assigned activity (SUBMEPP/PERA).

When the MJC is retrieved for each component, an automated material requisition is produced for mandatory parts and a list of contingency items provided with the work request.

The same format record can be added by local sites if local MJC items are developed.

C-8.8 MJC Alteration Documentation Differences

Alterations added to the MJC will be limited to those managed by the AMS. These are identified by the assignment of the AMS WC/JSN and structured alteration number as described in the Joint Fleet Maintenance Manual (JFFM).

Block 1 SHIP'S UIC: Enter the MJC UIC established by the TYCOM

Blocks 2-3 WC AND JSN: Enter the WC/JSN assigned by the alteration issuing authority.

Block 18 ALTERATIONS: Enter in position 1 and 2 the alteration type identified in Appendix C. This entry must match the WC suffix in the WC field (Block 2).

Block 27 S/F MHRS REM: Entry must be numeric. The use of "AUTO" (auto-close) is not appropriate for MJC alterations. Completion of deferrals for alterations must be by OPNAV 4790/CK.

C-8.9 MJC Index and Statistics

The MJC Index (Figure C-2) is produced as required by TYCOM instructions. A number of selection parameters are provided during call-down to limit the volume of the Index to particular

applications. MJC JCNs required by tended ships may be recorded on the OPNAV 4790/2L and provided to the TYCOM-designated support activity during the availability arrival conference. Selected MJC JCNs may be called down as directed by the TYCOM prior to the availability or by quarter year (e.g., calibration routines) and may be assigned to other than the scheduled availability. This allows the Production Management Assistant (PMA) and other managers to focus on correction of deficiencies with weekly status reports of service routines progression.

Also available is the MJC Call-Down Frequency Report. A number of selection parameters are provided to limit the volume of the report to particular applications. Available is a report on the number of times the MJC JCN was retrieved and the last retrieval date. This report allows monitoring of mandated JCN call-downs and also provides for culling out of locally created MJC routines which are seldom used. (Refer to the applicable system's user manual for additional reports that may be generated.)

C-8.10 Analysis of MJC/PMR Originated Production History

Each JCN called down from the MJC as a deferral into the Master CSMP is assigned a CSMP JCN different than the MJC JCN. Each specialized project may be assigned a unique WC suffix so that the Program Manager may retrieve selective history from the NAVSEALOGCEN 3-M data base (see Figure C-3 MJC Call Down Frequency Report).

Some special program WC suffix codes currently being used are:

_XSA	SHIPALTS
_XTY	TYCOM ALTS
EXSY	Depot Level (SY=ShipYard) availability routines. These routines assign standard 3-M data to each.
ESWBS/SWLIN	For Depot Return Cost Departure Reports as approved by NAVSEASYSCOM (SEA 07)
_XCR	Jobs for repair of components that failed calibration or weight testing. Each failed component will be assigned a unique JCN.
__JC	IMMP/RO/LID and other scheduled CMP PMRs

When a special program code is not assigned, the program will assign a WC suffix of "MC".

If allowed by TYCOM instructions, the ship may assign its own WC/JSN to the MJC routine.

With the exception of MJC Alterations, each retrieved MJC deferral will have its MJC JCN prefixed with an "M" and be written to the Configuration/Alteration Number field (block 18) of the CSMP deferral.

When the MJC is designated as multi-level, the MJC call-down is linked to the PMR scheduling file and retrieves all due and overdue components as tasks within the one CSMP deferral JCN. This will result in a family of data records being created to capture the METCAL required data when the lab reports completion of each component.

Each Program Manager is able to retrieve and analyze all transactions unique to the MJC JCN and WC suffices assigned to a special program.

C-8.11 Modification of On-Site MJC

Implementation, distribution and maintenance of the MJC will be as described in this instruction and supplemented by Fleet/ TYCOM instructions. It is essentials that existing MJC files, which have common application, be adapted by those commands not yet implemented. This will speed the integration of the Regional Maintenance Hubs and provide continuity to the existing 3-M database for Program Manager requirements.

The Fleet Maintenance Management System will provide connectivity to the initiatives of the SYSCOMs' for data storage and distribution.

The FLTCINCs/TYCOMs will provide instructions for management of the MJC to include centralized and on-site control.

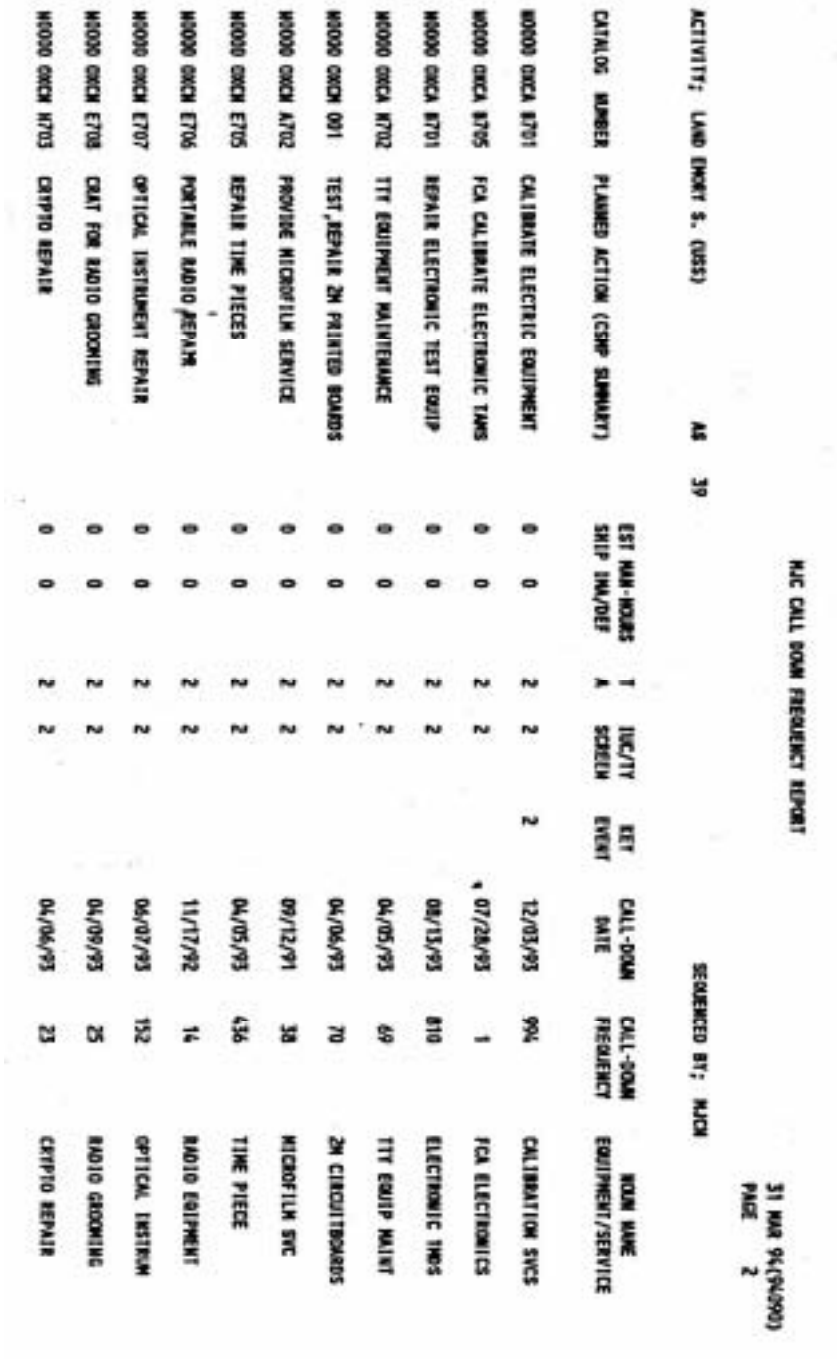
The existing method of confirming updates to the MJC by the IMAs is by including a "completed AWR record" in the update files sent from the originator. The originator subsequently monitors the MDS data.

94(94090) MASTER JOB CATALOG INDEX 31 MAR

ACTIVITY: LAND ENDURY S. (USS) AS 39 SEQUENCED BY: MAJCM UIC PAGE 2
UIC: 20635

SWAB/ SWAIN	JOB CATALOG NUMBER/TYPE	PLANNED ACTION (CSMP SUMMARY)	WORK NAME EQUIP/SERVICE	LMC	IMA/REP M/H	SHIP M/H	IUC/TY SCREEN	I A	KEY EVENT	START DAY	*FURNISH APL-IDENT
M0000	DXCN 0701	ESN ALIGNMENT	ESN EQUIPMENT	67a	75	AUTO	2	2	1	*	
M0000	EACF 0013	ACCOMPLISH INMP 513-0023-01	SEPARATOR FLASK	10C	170	AUTO	2	2	1	*	
M0000	EACF 0014	ACCOMPLISH INMP MR 513-0069-01	SEPARATOR FLASK	10C	2	AUTO	2	2	1	*	
M0000	EMCN 0001	SEAWATER SYSTEM METALS CONTROL	GENERIC MATERIAL	93A	20	AUTO	2	2	3	*	
M0000	EMCN 0002	BPFW FLUSHING RIG	BPFW FLUSH	38W	1	AUTO	2	2	1	*	
M0000	EMCN 0003	RADCON SERVICES	RADCON	94A	400	AUTO	2	2	1	*	
M0000	EMCN 0004	PROBOLOG PREP	MN CONDENSOR	38A	50	AUTO	2	2	1	*	
M0000	EMCN 0005	PRESSURIZER UT	PRESSURIZER	93A	17	AUTO	2	2	1	*	
M0000	EMCN 0006	WELDER QUALIFICATION	WELDER QUAL	26B	40	AUTO	2	2	1	*	
M0000	EMCN 0007	SHFT/BBG/PROP INSPECTION	SHFT/BBG/PROP	38A	48	AUTO	2	2	1	*	
M0000	EMCN 0008	RADIAC CALIBRATION	RADIAC CALIBRATE	10C	1	AUTO	2	2	1	*	
M0000	EMCN 0009	HYDROBLAST CLEANER	HYDROBLASTER	25D	16	AUTO	2	2	1	*	
M0000	EMCN 0010	UT MP STEAM DRAINS	MP STEAM DRN UT	93A	44	AUTO	2	2	1	*	
M0000	EMCN 0011	INSPECT MAIN PROPELLER	MN PROPELLER		0	AUTO	2	2	0	*	
M0000	EMCN 0012	SEAWATER SYSTEM METALS CONTROL	GENERIC MATERIAL	93A	24	AUTO	2	2	3	*	
M0000	EXCA 0702	CALIBRATE ELECTRICAL INSTRUMNTS	CALIBRATION SVCS	51C	40	AUTO	2	2	1	*	
M0000	EXCA 0703	CALIBRATE RADIAC EQUIPMENT	RADIAC EQUIPMENT	67F	20	AUTO	2	2	1	*	
M0000	EXCA 0704	CAL MECHANICAL INSTRUMENTS	CALIBRATION SVCS	96a	75	AUTO	2	2	1	*	

Figure C-2: Master Job Catalog Index Page



MJC CALL DOWN FREQUENCY REPORT

31 MAR 94(940930)
PAGE 2

ACTIVITY: LAND ENGRY S. (USS) AS 39 SEQUENCED BY: MJCN

CATALOG NUMBER	PLANNED ACTION (CSMP SUMMARY)	EST MAN-HOURS SKIP	EST MAN-HOURS INA/DEF	I A	ISC/TY SCREEN	KEY EVENT	CALL-DOWN DATE	CALL-DOWN FREQUENCY	WORK NAME EQUIPMENT/SERVICE
M0000 GMCA E701	CALIBRATE ELECTRIC EQUIPMENT	0	0	2	2	2	12/03/93	994	CALIBRATION SVCS
M0000 GMCA E705	FCA CALIBRATE ELECTRONIC TAMS	0	0	2	2		07/28/93	1	FCA ELECTRONICS
M0000 GMCA E701	REPAIR ELECTRONIC TEST EQUIP	0	0	2	2		08/13/93	810	ELECTRONIC TMDS
M0000 GMCA M702	TTY EQUIPMENT MAINTENANCE	0	0	2	2		04/05/93	69	TTY EQUIP MAINT
M0000 GMCH 001	TEST,REPAIR 2M PRINTED BOARDS	0	0	2	2		04/06/93	70	2M CIRCUITBOARDS
M0000 GMCH A702	PROVIDE MICROFILM SERVICE	0	0	2	2		09/12/91	38	MICROFILM SVC
M0000 GMCH E705	REPAIR TIME PIECES	0	0	2	2		04/05/93	436	TIME PIECE
M0000 GMCH E706	PORTABLE RADIO REPAIR	0	0	2	2		11/17/92	14	RADIO EQUIPMENT
M0000 GMCH E707	OPTICAL INSTRUMENT REPAIR	0	0	2	2		06/07/93	152	OPTICAL INSTRUM
M0000 GMCH E708	CRAT FOR RADIO GROOMING	0	0	2	2		04/09/93	25	RADIO GROOMING
M0000 GMCH M703	CRYPTO REPAIR	0	0	2	2		04/06/93	23	CRYPTO REPAIR

Figure C-3: MJC Call Down Frequency Report

MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

APPENDIX D
SHIPS' 3-M FORMS AND PMS MANAGEMENT TOOLS ORDERING INFORMATION

PMS MANAGEMENT TOOLS NSN

Conventional Sizes

Weekly PMS Schedule Holder, Single Display Surface.....1H9905-00-255-5930
Weekly PMS Schedule Holder with 1 Hinged Panel,3 Display Surfaces.....1H9905-00-255-5932
#2 Panel for Weekly PMS Schedule Holder 5932 increases to 5 Display.....1H9905-00-255-5933
#3 Panel for Weekly PMS Schedule Holder 5932 w/5933 increases to 7 Display Surfaces....1H9905-00-255-5934
MCB (Maintenance Control Board), Standard, 2 Hinged Panels, 6 Surfaces.....1H9905-00-255-5954
MCB Hinged Panel, 1 Panel, 2 Additional Display Surfaces, increases 5954 to 8 Surfaces.1H9905-00-255-5953
MCB Hinged Panel, 1 Panel, 2 Additional Display Surfaces, incr 5954 w/5953 to
10 Surfaces 1H9905-00-255-5952
MCB (Maintenance Control Board), 10 Surfaces.....1H9905-00-255-5951
MCB Hinged Panel, 1 Panel, 2 Additional Display Surfaces, increases 5951 to
12 Surfaces 1H9905-00-255-5950
MCB Hinged Panel, 1 Panel, 2 Additional Display Surfaces, incr 5951 w/5950 to
14 Surfaces 1H9905-00-255-5949
MCB Hinged Panel, 1 Panel, 2 Addnl Display Surfaces, incr 5951 w/5950 & 5949
to 16 Surfaces 1H9905-00-255-5948

Compact Sizes

Weekly PMS Schedule Holder, Single Display Surface.....1H9905-00-255-5931
Weekly PMS Schedule Holder with 1 Hinged Panel, 3 Display Surfaces.....1H9905-00-255-5935
#2 Panel for Weekly PMS Schedule Holder 5935 increases to 5 Display Surfaces.....1H9905-00-255-5936
#3 Panel for Weekly PMS Schedule Holder 5935 w/5936 increases to 7 Display Surfaces....1H9905-00-255-5937
MCB, Compact, 3 Hinged Panels, 7 Display Surfaces.....1H9905-00-255-5955
#4 MCB Hinged Panel, 1 Panel, 2 Additional Display Surfaces, increases 5955 to
9 Surfaces 1H9905-00-255-5938
#5 MCB Hinged Panel, 1 Panel, 2 Addnl Display Surfaces, incr 5955 w/5938 to
11 Surfaces 1H9905-00-255-5956

Maintenance Requirement Card Holders

Standard MRC and Maintenance record Holder.....1H9905-00-255-5929
Large Capacity MRC and Maintenance Record Holder.....1H9905-00-255-5960

PMS OPNAV FORMS NAME/NUMBER

Cycle PMS Schedule (conventional) OPNAV 4790/13.....1I0107-LF-770-3220
Quarterly PMS Schedule (conventional) OPNAV 4790/14.....1I0107-LF-770-3241
Weekly PMS Schedule (conventional) OPNAV 4790/15.....1I0107-LF-770-3260
Cycle PMS Schedule (compact) OPNAV 4790/13A.....1I0107-LF-770-3230
Quarterly PMS Schedule (compact) OPNAV 4790/14A.....1I0107-LF-770-3250
Weekly PMS Schedule (compact) OPNAV 4790/15A.....1I0107-LF-770-3270
PMS Feedback Report, OPNAV 4790/7B.....1I0107-LF-007-8000

OTHER FORMS USED IN PMS

Maintenance Requirement Card OPNAV 4790/85.....1I0107-LF-047-9410
Maintenance Requirement Card (MRC) Continuation Card OPNAV 4790/83.....1I0107-LF-047-9415
Maintenance Index Page (MIP) OPNAV 4790/85.....1I0107-LF-047-9420
Tag Guide List OPNAV 4790/107.....1I0107-LF-047-9545
Technical Publication Deficiency Report OPNAV 4790/66.....1I0107-LF-002-4400
Equipment Guide List OPNAV 4790/81.....1I0107-LF-047-9405

II. **SHIPS' 3-M MDS FORMS**

Ship's Configuration Change Form OPNAV 4790/CK.....1I0107-LF-047-9001
Ship's Configuration Change Form Continuation Page OPNAV 4790/CK(C).....1I0107-LF-047-9010
Ship's Maintenance Action Form OPNAV 4790/2K.....1I0107-LF-047-9011
Supplemental Form OPNAV 4790/2L.....1I0107-LF-770-3060
Maintenance Planning and Estimating Form (P&E)OPNAV 4790/2P.....1I0107-LF-770-3079

MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

APPENDIX E

LIST OF ACRONYMS

A

A&I	Alteration and Improvement
ACF	Accomplishment Confidence Factor
ACN	Advance Change Notice
ACU	Assault Craft Unit
ADP	Automated Data Processing
ADPE	Automated Data Processing Equipment
AEC	Assessment of Equipment Condition
AEL	Allowance Equipage List
AER	Alteration Equivalent to Repair
AILSIN	Automated Integrated Language System Identification Number
AIS	Automated Information Systems
AIMD	Aircraft Intermediate Maintenance Department
AIT	Alteration Installation Team
ALID	Automated Library Issue Document
ALRE	Aviation Launch and Recovery Equipment
AMS	Alteration Management System
AMT	Amalgamated Military/Technical Improvement Plans
APL	Allowance Parts List
AR	Alteration Request
ASG	Afloat Shipping Guide
ASI	Automated Shore Interface
ATG	Afloat Training Group
ATO	Afloat Training Organization
AWR	Automated Work Request

B

BACD	Basic Alteration Class Drawings
BOATALT	Boat Alteration
BOC	Base Operating Contract
BUIC	Benefiting Unit Identification Code
BUMED	Bureau of Medicine and Surgery

C

CA	Coordinating Activity
CAGE	Commercial and Government Entity
CANTRAC	Catalog of Naval Training Courses
CASREP	Casualty Report
CCF	Configuration Change Form
CD-ROM	Compact Disk - Read Only Memory
CDA	Central Design Activity
CDM	Configuration Data Manager
CFFC	Commander Fleet Forces Command
CID	Component Identification Number
CINC	Commander in Chief
CIS	Commercial Industry Service
CM	Corrective Maintenance
CMP	Class Maintenance Plan
CNO	Chief of Naval Operations
COMNAVSEASYSCOM	Commander Naval Sea Systems Command
COMSPAWARSYSCOM	Commander Space and Naval Warfare Systems Command
COSAL	Coordinated Shipboard Allowance List
CSA	Navy's Central Configuration Status Accounting System
CSMP	Current Ship's Maintenance Project

D

DATC	Development and Training Center
DBI	Demand Based Items
DCA	Damage Control Assistant
DCPO	Damage Control Petty Officer
DEN	Data Element Number
DFS	Departure from Specification
DIRSSPO	Director Strategic Systems Project Office
DLR	Depot Level Repairable
DOD	Department of Defense
DPMA	Docking Phased Maintenance Availability
DSRV	Deep Submergence Recovery Vehicles
DSS	Deep Submergence System
DT	Downtime

E

EC	Engineering Change
ECP	Engineering Change Proposal
EGL	Equipment Guide List
EIC	Equipment Identification Code

ELEX	Electronics Equipment
EOSS	Engineering Operational Sequencing System
ESWBS	Expanded Ship Work Breakdown Structure

F

FBR	Feedback Report
FC	Field Change
FGC	Functional Group Code
FLETRACEN	Fleet Training Center
FLETRAGRU	Fleet Training Group
FLR	Field Level Repairable
FLTC	Fleet Commander
FMP	Fleet Modernization Program
FMPMIS	Fleet Modernization Program Management Information System (See NDE)
FMSO	Fleet Material Support Office
FPR	Failed Part Reporting
FR	Force Revision
FSCM	Federal Supply Code for Manufacturers
FTC	Fleet Training Command
FTSCLANT	Fleet Technical Support Center, Atlantic
FTSCPAC	Fleet Technical Support Center, Pacific

H

HAZMAT	Hazardous Material
HM&E	Hull, Mechanical, and Electrical Equipment
HMUG	Hazardous Material User's Guide
HT	Hull Technician

I

IEM	Inactive Equipment Maintenance
ILO	Integrated Logistics Overhaul
ILS	Integrated Logistics Support
ILSMT	Integrated Logistics Support Maintenance Team
IM	Intermediate Maintenance
IMA	Intermediate Maintenance Activity
IMAV	I-Level Maintenance Availability
INSURV	Board of Inspection and Survey
ISE	In-Service Engineer
ISEA	In-Service Engineering Agent
ISIC	Immediate Superior in Command
IUC	Intermediate Unit Commander

J

JCN	Job Control Number
JETDS	Joint Electronic Type Designation System
JSN	Job Sequence Number

L

LATD	Lacks Adequate Technical Description
LID	Library Issue Document
LOEC	List of Effective Cards
LOEP	List of Effective Pages
LSD	Logistic Support Data
LU	Lay-Up Maintenance
LWC	Lead Work Center

M

MA	Maintenance Action
MACHALT	Machine Alteration
MACN	Manual Advance Change Notice
MCB	Maintenance Control Board
MCC	Material Control Code
MDCO	Maintenance Document Control Office
MDS	Maintenance Data System
MDSTEIR	Maintenance Data System Transaction Error Identification Report
MEASURE	Metrology Automated System for Uniform Recall and Reporting
MH	Man-hour
MHR	Material History Report
MILSTRIP	Military Standard Requisitioning and Issue Procedures
MIP	Maintenance Index Page
MIS	Management Information System
MJC	Master Job Catalog
MPR	MDS Performance Rate
MR	Maintenance Requirement
MRC	Maintenance Requirement Card
MRS	Maintenance Requirement Substantiated
MSC	Maintenance Support Center
MTR	Mandatory Turn-In Repairable
MTS	Moored Training Ship
MTSSY	Moored Training Ship Support Yard

N

NALCOMIS	Naval Aviation Logistics Management Information System
NAALS	Naval Air Navigation and Landing Systems
NAVCOMTELSTA	Naval Computer and Telecommunications Station
NAVDAC	Naval Data Automation Command
NAVMEDLOGCOM	Naval Medical Logistics Command
NAVSEA	Naval Sea Systems Command
NAVSEASYSCOM	Naval Sea Systems Command
NAVSEALOGCEN	Naval Sea Logistics Center
NC	Not Carried
NDE	Navy Data Environment
NEC	Navy Enlisted Classification
NHA	Next Higher Assembly
NICN	Navy Item Control Number
NIR	No Individual Requirement
NISMF	Navy Inactive Ship Maintenance Facility
NMR	No Maintenance Required
NROTC	Naval Reserve Officers Training Corps
NSDSA	Naval Sea Data Support Activity
NSN	National Stock Number
NSWCCD SSES	Naval Surface Warfare Center, Carderock Division Ship Systems Engineering Station
NTCSS	Navy Tactical Command Support System

O

OA	Ordnance Alteration (See ORDALT)
OCS	Officer Candidate School
O&MN	Operation and Maintenance Navy
OM	Organizational Maintenance
OMMS-NG	Organizational Maintenance Management System-Next Generation
OPNAV	Naval Operations (CNO staff)
ORD	Ordnance Equipment
ORDALT	Ordnance Alteration
OT	Operational Test
OWP	Overhaul Work Package (Submarines)

P

PD	Priority Designator
PEB	Propulsion Examining Board
PEETE	Portable Electrical/Electronic Test Equipment
PM	Periodic Maintenance
PMDO	Planned Maintenance During Overhaul

PMR	Periodic Maintenance Requirement
PMS	Planned Maintenance System
PMT	Performance Monitoring Team
POM	Program Objective Management
PPE	Personal Protective Equipment
PPR	PMS Performance Rate
PQS	Personnel Qualification Standard
PREINSURV	Pre-Inspection and Survey
PSA	Post-Shakedown Availability

Q

QA	Quality Assurance

R

RAUIC	Repair Activity Unit Identification Code
RAV	Restricted Availability
RCM	Reliability-Centered Maintenance
REC	Re-entry Control
RIC	Repairable Identification Code
RIN	Record Identification Number
RM&A	Reliability, Maintainability, and Availability
ROH	Regular Overhaul
ROV	Repair of Other Vessels
RWC	Repair Work Center
RSG/MCC	Readiness Support Group/Maintenance Coordinating Center

S

SAC	Service Application Code
SAR	Ship Alteration Record
SARP	Ship Alteration and Repair Package
SCAT	Sub-Category Code
SCLSC	Ship Configuration Logistic Support Control
SCLSIS	Ship Configuration Logistic Support Information System
SEAS	Supply Edit Audit and SIM System
SEF	Ship Equipment File
SEL	Selected Equipment List
SFWL	Ships Force Work List
SHAPM	Ship Acquisition Program Manager
SHIPALT	Ship Alteration
SHIPMER	Ship Maintenance Effectiveness Review
SIMA	Shore Intermediate Maintenance Activity
SLCC	Ship's Logistics Component Configuration

SLEC	Ship's Logistics Equipment Configuration
SLM	Ship Logistics Manager
SMIC	Special Material Identification Code
SMIP	Ships' 3-M Systems Improvement Program
SMMSO	SSBN Maintenance Monitoring Support Office
SMS	Surface Missile System
SNAP	Shipboard Non-Tactical ADP Program
SOC	Scope of Certification
SPALT	Special Projects Alteration
SPAWARSYSCOM	Space and Naval Warfare Systems Command
SPETERL	Ship's Portable Electrical/Electronics Test Equipment Requirements List
SPIN	Standard PMS Item Name
SPMIG	Standard PMS Material Identification Guide
SRD	Selected Record Date/Drawing
SSC	Supply Support Center
STEP	Shipboard Training Enhancement Program
SU	Start-Up Maintenance
SUBMEPP	Submarine Maintenance, Engineering, Planning, and Procurement
SUPSHIP	Supervisor of Shipbuilding, Conversion, and Repair, USN
SURFMER	Surface Ship Maintenance Effectiveness Review
SWAB	Ship Work Authorization Boundary
SWBS	Ship Work Breakdown Structure
SWLIN	Ship Work Line Item Number
SYSCOM	Systems Command

T

T/A	Type Availability
TAV	Technical Availability
TECSUPGRU	Technical Support Group
TEI	Test Equipment Index
TFBR	Technical Feedback Report
TGL	Tag Guide List
TM	Technical Manual
TMDER	Technical Manual Deficiency/Evaluation Report
TRF	Trident Refit Facility
TSU	TYCOM Support Unit
TYCOM	Type Commander
TYCOM REP	Type Commander Representative

U

UIC	Unit Identification Code
UND	Urgency of Need Designator
UM	Unscheduled Maintenance
USNA	U.S. Naval Academy

W

WC	Work Center
WDC	Work Definition Conference
WPNSTA	Weapons Station
WSF	Weapon Systems File

MISCELLANEOUS

2-M	Miniature/Microminiature Repair (Electronic Modules)
2P	Planning and Estimating Record
3-M	Maintenance and Material Management System
3MPR	3-M Performance Rate
CK	Configuration Change Record

MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

APPENDIX F

SHIPS' 3-M POINTS OF CONTACT

TELEPHONE NUMBERS ACTIVITY/CODE	**DSN**	**AREA**	**COMM**	**EXT**
***CNO (N431H) CHIEF OF NAVAL OPERATIONS N431H WASHINGTON DC 20350-2000	329	703	601-1665	
***COMLANTFLT (N432) COMMANDER U S ATLANTIC FLEET N432 1562 MITSCHER AVE SUITE 250 NORFOLK VA 23551-2487	836	757	836-3754	
***COMPACFLT (Code 4314C) COMMANDER U S PACIFIC FLEET CODE 4314C PEARL HARBOR HI 96860-7000	474	808	474-6353	
***COMNAVAIRLANT (N71) COMMANDER NAVAL AIR FORCE U S ATLANTIC FLEET CODE (N71) NAVAL AIR STATION BLDG S29 NORFOLK VA 23511	564	757	444-8836/8949	
***COMNAVAIRPAC (N435) COMMANDER NAVAL AIR FORCE U S PACIFIC FLEET N435 P O BOX 357051 SAN DIEGO CA 92135-7051	735	619	545-1523	
***COMNAVSURFLANT (N432) COMMANDER NAVAL SURFACE FORCE U S ATLANTIC FLEET N432A64/N432A65 1430 MITSCHER AVENUE NORFOLK VA 23551-2494	836	757	836-3367	

TELEPHONE NUMBERS ACTIVITY/CODE	DSN	AREA	COMM	EXT
***COMNAVSURFPAC (N41) (3-M Officer) COMMANDER NAVAL SURFACE FORCE U S PACIFIC FLEET N41 2841 RENDOVA ROAD SAN DIEGO CA 92155-5490	577	619	437-3513	
***COMNAVSURFPAC (N41) (ATG) (Afloat Training Group Pacific) COMMANDER AFLOAT TRAINING GROUP PACIFIC N41 3455 STURTEVANT ST STE 1 SAN DIEGO CA 92136-5069	526	619	556-1792	
***COMSUBLANT (N4071A) COMMANDER SUBMARINE FORCE U S ATLANTIC FLEET N4071A 7958 BLANDY BLVD NORFOLK VA 23551-2492	836	757	836-1278	
***COMSUBPAC (N4721) COMMANDER SUBMARINE FORCE U S PACIFIC FLEET N4721 1430 MORTON STREET BLDG 665 PEARL HARBOR HI 96860-6543		808	473-5577	128
***COMNAVRESFOR (Code N4) COMMANDER NAVAL RESERVE FORCES CODE N4 4400 DAUPHINE STREET NEW ORLEANS LA 70146-5100	678	504	678-5715	
***COMMINEWARCOM (N841) COMMANDER MINE WARFARE COMMAND N841 325 FIFTH STREET S.E. CORPUS CHRISTI TX 78419-5032	861	361	961-4852	

TELEPHONE NUMBERS ACTIVITY/CODE	**DSN**	**AREA**	**COMM**	**EXT**
***COMNAVSEASYSCOM (SEA 04RM11) (Ships' 3-M (SEA 04RM11)) COMMANDER NAVAL SEA SYSTEMS COMMAND SEA 04RM11 1333 ISAAC HULL AVE SE STOP 4111 WASHINGTON NAVY YARD DC 20376-4111	326	202	781-3374/3372	
***COMNAVSEASYSCOM (SEA 04L5) (Fleet Logistics Support – Configuration Management (SCLSIS)) COMMANDER NAVAL SEA SYSTEMS COMMAND SEA 04L5 1333 ISAAC HULL AVE SE STOP 4066 WASHINGTON NAVY YARD DC 20376-4066	326	202	781-1852/3346	
***COMNAVSEASYSCOM (SEA 04RM) (Maintenance Engineering & Technology Transfer Division) COMMANDER NAVAL SEA SYSTEMS COMMAND SEA 04RM 1333 ISAAC HULL AVE SE STOP 4111 WASHINGTON NAVY YARD DC 20376-4111	326	202	781-3382	
***COMNAVAIRSYSCOM (AIR 3.6) (AVIATION 3-M) COMMANDER NAVAL AIR SYSTEMS COMMAND AIR 3.6 LOGISTICS SUPPORT DEPARTMENT 47060 MCLEOD ROAD UNIT 8 PATUXENT RIVER MD 20670-1625	757	301	757-8790	

TELEPHONE NUMBERS ACTIVITY/CODE	**DSN**	**AREA**	**COMM**	**EXT**
***COMSPAWARSYSCOM (04L) COMMANDER SPACE AND NAVAL WARFARE SYSTEMS COMMAND 04L 4301 PACIFIC HIGHWAY SAN DIEGO CA 92110-3127	524	858	537-0521	
***COMNAVSUPSYSCOM (SUP 412) COMMANDER NAVAL SUPPLY SYSTEMS COMMAND SUP 412 5450 CARLISLE PIKE P O BOX 2050 MECHANICSBURG PA 17055-0791	430	717	605-7254	
***FIRSTNCD (N432) FIRST NAVAL CONSTRUCTION DIVISION 1310 8TH STREET, SUITE 100 NORFOLK VA 23521-2435	253	757	462-8131	169
***TRASUPCEN NORFOLK DET COMMANDING OFFICER TRAINING SUPPORT CENTER NORFOLK DET 9545 BAINBRIDGE AVENUE NORFOLK VA 23511-2794	565	757	445-7353	1098
***FTSCLANT (Code 4103) COMMANDING OFFICER FLEET TECHNICAL SUPPORT CENTER, ATLANTIC CODE 4103 9727 AVIONICS LOOP NORFOLK VA 23511-4396	646	757	443-3872	2576
***FTSCPAC (Code 401) COMMANDING OFFICER FLEET TECHNICAL SUPPORT CENTER PACIFIC CODE 401 3375 SENN ROAD SUITE 1 SAN DIEGO CA 92186-5002	524	619	524-2647	

TELEPHONE NUMBERS ACTIVITY/CODE	DSN	AREA	COMM	EXT
***NSWC CD SSES (Code 952) (Assessment of Equipment Condition (AEC) Program) COMMANDING OFFICER NSWC CD SSES PHILADELPHIA CODE 952 5001 SOUTH BROAD STREET PHILADELPHIA PA 19112-1403	443	215	897-7440	
***NSWC CD SSES (Code 942) (Hull, Mechanical and Electrical PMS) COMMANDING OFFICER NSWC CD SSES PHILADELPHIA CODE 942 5001 SOUTH BROAD STREET PHILADELPHIA PA 19112-1403	443	215	897-1361	
***INSURV PRESIDENT PRESIDENT BOARD OF INSPECTION AND SURVEY 2600 TARAWA COURT SUITE 250 NORFOLK VA 23521	253	757	462-7006	
***CENTER FOR SERVICE SUPPORT COMMANDING OFFICER CENTER FOR SERVICE SUPPORT FIM DIRECTORATE 1425 PRINCE AVENUE ATHENS GA 30677	354	706	355-7501	
***SPAWARSYSCEN NORFOLK COMMANDING OFFICER SPACE AND NAVAL WARFARE SYSTEMS CENTER NORFOLK 1837 MORRIS STREET SUITE 3311 NORFOLK VA 23511-3432 *24 HOUR TROUBLE DESK	646 588	757 800	443-0400 836-1816* 5665	

TELEPHONE NUMBERS ACTIVITY/CODE	**DSN**	**AREA**	**COMM**	**EXT**
***SPAWARSYSCEN NORFOLK (Code 60) DET SAN DIEGO, CA OFFICER IN CHARGE SPAWARSYSCEN CHESAPEAKE DETPAC CODE 60 P O BOX 217 NAVAL STATION SAN DIEGO CA 92136-5217 *24 HOUR TROUBLE DESK	526 526	619 619	556-7671 556-7648*	
***NAVSEALOGCEN (Code 60) COMMANDING OFFICER NAVAL SEA LOGISTICS CENTER CODE 60 P O BOX 2060 5450 CARLISLE PIKE MECHANICSBURG PA 17055-0795	430	717	605-4730	
***NSDSA (Code 0310) COMMANDER NAVAL SURFACE WARFARE CENTER, PORT HUENEME DIV NAVAL SEA DATA SUPPORT ACTIVITY CODE 0310 4363 MISSILE WAY PORT HUENEME CA 93043-4307	982	805	228-0777	

MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

APPENDIX G

MANUAL PREPARATION OF PMS SCHEDULES

APPENDIX G

MANUAL PREPARATION OF SCHEDULES
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APPENDIX G

MANUAL PREPARATION OF SCHEDULES

G-1 PURPOSE

This appendix provides instruction on how to create and maintain cycle, quarterly and weekly schedules for commands that are unable to utilize the SKED Program. Appendix H will also assist in those instances when SKED is not available due to network and or computer difficulties and the Work Center needs to manually track PMS accomplishment until the program is available.

G-2 PREPARATION OF CYCLE PMS SCHEDULE

Cycle PMS Schedules are used to plan and schedule maintenance requirements to be conducted during each calendar quarter. Department heads should devote considerable attention to the preparation of the Cycle schedule since these efforts will directly affect long-range PMS scheduling.

a. Materials required for preparation:

(1) Blank Cycle schedules (OPNAV 4790/13 or OPNAV 4790/13A).

(2) The work center's portion of the PMS Master File (List of Effective Pages (LOEP)) (Report No. PMS 5)

(3) Applicable MRCs (for general reference) from the Work Center's PMS Manual.

(4) Applicable MIPs from the work center’s file.

b. Procedures:

(1) Initial entries will be typed or legibly written in black ink on the Cycle schedules. Changes will be made in ink and initialed. In the "Schedule Quarter After Overhaul As Indicated" columns, each quarter is circled when the schedule for that quarter has been prepared. The previous quarter is X'd out.

(2) The cycle numbering will be reset after three Inter-Deployment Training Cycles or Docking Availability. The next full calendar quarter following completion will be designated as the "first quarter after overhaul." Shore stations will reset after every 20 quarters.

(3) From the LOEP, accurately transcribe each item of equipment in MIP sequence excluding equipment coded "NIR", "NMR", and “MRS” on the Cycle schedule. If desired, list the MIPs for equipment coded "MRS", and complete the scheduling information for those items when the developed PMS is received. (Note: It is not necessary for the Cycle schedule to match the LOEP line for line.)

(a) Use the MIP column to list the MIP code without the date coding, e.g., E-l/55, EL-2/BO, 4411/I, etc.

(b) Use the Component column to list the name of each system, subsystem, or equipment. When more than one item is located within a work center, the serial numbers or ship's numbering system shall be entered to identify each item on a single line of the schedule. The location may be entered. "EGL" shall be entered in this column when an EGL is applicable. When multiple EGLs are used, they can be scheduled on separate lines or on one line (or group of lines) as "1-Q-1", "2-Q-1", "3-Q-l", etc.

(4) From the applicable MIP, list the periodicity codes in the "Schedule Quarter After Overhaul As Indicated" and "Each Quarter" column as described below. Only the presence of mandatory related maintenance will be indicated by the "#” symbol associated with the parent MR (e.g., "S-l#").

(a) In the column "Schedule Quarter After Overhaul As Indicated:”

1. List each semiannual (S) maintenance requirement in one of the four columns, then list again 6 months later. For example, an S-1 requirement scheduled to occur in the 1, 5, -and 9 quarters is also scheduled in the 3, 7, and 11 quarters.

2. List each annual (A) maintenance requirement in one of the four columns.

3. List each multiple month periodicity MR (9M, 18M, 24M, 30M, 36M, etc.). Quarter after overhaul must be indicated in parentheses. (For example, l8M-1(6) indicates an "every 18 months" periodicity MR scheduled to be accomplished in the sixth quarter after overhaul.) The following tables serve as examples for determining quarter after overhaul. To use these tables, determine in which quarter after overhaul the MR will first occur. Go to this quarter in the first row of the table.

Then schedule the MR for the quarters in that column as applicable. (For example, if l8M-1 is scheduled for the 4th quarter after overhaul, it must also be scheduled for the 10th, 16th, and 22nd quarter after overhaul; as applicable.) The table elements below are listed by quarters (3 months = 1 quarter).

18M Scheduling Table

First Scheduling:	1	2	3	4	5	6
Second Scheduling:	7	8	9	10	11	12
Third Scheduling:	13	14	15	16	17	18
Fourth Scheduling:	19	20	21	22	23	24

24M Scheduling Table

First Scheduling:	1	2	3	4	5	6	7	8
Second Scheduling:	9	10	11	12	13	14	15	16
Third Scheduling:	17	18	19	20	21	22	23	24

30M Scheduling Table

First Scheduling:	1	2	3	4	5	6	7	8	9	10
Second Scheduling:	11	12	13	14	15	16	17	18	19	20
Third Scheduling:	21	22	23	24						

36M Scheduling Table

First Scheduling:	1	2	3	4	5	6	7	8	9	10	11	12
Second Scheduling:	13	14	15	16	17	18	19	20	21	22	23	24

48M Scheduling

First scheduling in first 16 quarters
Second scheduling 16 quarters later

60M Scheduling

First scheduling in first 20 quarters
Second scheduling 20 quarters later

NOTE

Prior to scheduling 30M, 36M; 48M, or 60M, review MRC to see if specific quarter after overhaul is indicated

4. Ships with cycles of less than 24 quarters are to schedule cycle requirements within this operational time frame. Ships delayed beyond 24 quarters are to extend their Cycle PMS Schedule by adding quarter numbers in the "Schedule Quarter After Overhaul As Indicated" column. (Multiple month requirements needed before entering overhaul must be reviewed and rescheduled as necessary.)

(a) In the "Each Quarter" Column: List 2W, 3W, M, 2M, and Q maintenance requirements, and all situational requirements. Only the presence of mandatory related maintenance will be indicated by a "#" symbol with the parent MR.

5. The prepared Cycle PMS Schedule is reviewed, signed, and dated by the Department Head. Once the cycle schedule has been signed, maintenance requirements listed are not to be moved from one quarter to another. If rescheduling becomes necessary, it will be reflected on the Quarterly PMS Schedules.

6. All superseded Cycle schedules will be retained for 12 months.

G-3 PREPARATION OF QUARTERLY PMS SCHEDULE

OPNAV 4790/14 or 14A (for SSBNs, 14B or 14C) will be used. Initial form entries will be typed or legibly written in black ink. Changes will be made in ink and initialed. Process is as follows:

a. Enter the work center code.

b. Enter the calendar year of the current quarter.

c. Enter the number of the quarter after overhaul as reflected on the Cycle PMS Schedule.

d. Enter the calendar months of the quarter (SSBNs will prepare quarterly schedules to coincide with crew cycle).

e. Each column represents a week and is divided into 7 days by the use of tick marks across the top. The first tick marked space within a column represents Monday. Monday's date for each week in the quarter is placed on the pedestal between each column. The first Monday in January, April, July, or October will begin each quarter.

f. The days the ship expects to be underway are lightly shaded (in pencil) across the tick marks (this does not apply to submarines).

g. Using both the LOEP and the Cycle PMS Schedule, enter the complete MIP number in the column titled "MIP" in a space in line with the subject equipment on the cycle schedule. From the Cycle PMS Schedule, select the "Schedule Quarter After Overhaul As Indicated" column corresponding to the quarter being scheduled. Transcribe and appropriately schedule each of the maintenance requirements (S, A, and multi-month) listed in this column to the quarterly schedule. From the maintenance requirements listed in the "Each Quarter" column, transcribe and appropriately schedule only 2W, 3W, M, 2M, and Q MRs. The intervals of periodic maintenance are defined as:

(1) Monthly--Will be scheduled within the interval between 3 and 6 weeks following the last accomplishment. A monthly PMS maintenance requirement must be scheduled three times in a quarter. Note: If a monthly maintenance check is circled and rescheduled, it may be necessary to move all subsequent checks to meet allowed intervals.

(2) Multi-Month, less than annual.

(a) 2M--Every second month within the interval between seven and ten weeks.

(b) 9M--Every ninth month within the interval between 8 and 10 months from its last accomplishment.

(3) Quarterly--Will be scheduled once each quarter within the interval 2 to 4 months following the last accomplishment.

(4) Semiannual--Within the interval between 4 and 8 months following last accomplishment.

(5) Annual--Within the interval between 3 and 5 quarters following last accomplishment.

(6) Multi-months greater than annual. Those MRs performed less frequently than once a year (e.g., 18M, 24M, 36M, etc.) within the interval of plus/minus one quarter of the quarter specified by the periodicity interval.

NOTE

To determine if maintenance actions should be performed in port or at sea, refer to MIPs and MRCs for a brief description of the maintenance actions.

h. With the exception of related daily and weekly PMS requirements, ensure that all mandatory related maintenance is identified and scheduled. Mandatory maintenance will be identified with a leading pound sign "#" and bracketed within parentheses. Convenience related maintenance selected for accomplishment is identified by ( ) brackets.

i. All calendar situation requirements (24M-2R, A-2R, S-1R, Q-3R, M-lR) must be accomplished at least once during the calendar periodicity specified. In addition, these requirements and situational requirements will be accomplished and documented each time the situation arises.

j. Bring forward any PMS requirement listed in the "Reschedule" column of the previous Quarterly PMS Schedule to the Quarterly PMS Schedule being prepared. Ensure emphasis is given to accomplishing rescheduled MRs.

k. The prepared Quarterly PMS Schedule shall be reviewed, signed, and dated by the Division Officer in the approval signature block. If the ship's operating schedule changes significantly, review the PMS requirements scheduled in the affected periods and reschedule as necessary.

G-4 PREPARATION OF WEEKLY PMS SCHEDULE

Using OPNAV 4790/15 or 4790/14A, type or legibly write in ink the following information from the Cycle PMS Schedule, the LOEP and applicable MIPs.

a. Work center identification.

b. MIP number and component will match the Cycle PMS Schedule line for line.

c. Daily and weekly PMS requirements as indicated on the MIPs. List all weekly requirements in the Monday column and daily requirements in each day of the week column and twice in the "SAT. - SUN." column.

d. All situation requirements are listed in the "Next Four Weeks" column and scheduled, as the situation requires.

The 2W and 3W periodicities are also listed in the "Next Four Weeks" column.

e. The schedule will then be either laminated or covered with plastic so it can be cleared and updated each week.

MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

APPENDIX H

ASSIGNMENT OF RESPONSIBILITIES FOR THE PLANNED MAINTENANCE SYSTEM (PMS) OF THE SHIPS' MAINTENANCE AND MATERIAL MANAGEMENT (3-M) SYSTEM

REFERENCE		INSTRUCTION NO. SUBJECT
(a)	OPNAVINST 4700.7 Series,	Maintenance Policy for Naval Ships
(b)	MIL-P-24534A (NAVY)	PMS Document Development Specification

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H-1 PLANNED MAINTENANCE SYSTEM (PMS) POLICY.

a. All maintenance requirements shall be developed using Reliability-Centered Maintenance (RCM) methodology as directed by reference (a). Preventive maintenance actions are required by reference (a) to be developed in accordance with reference (b) including preservation and maintenance requirements for equipment in an inactive status and calibration requirements relating to the Shipboard Gage Calibration Program. PMS requirements shall be developed concurrently with ship construction or conversion and new shipboard systems or equipment procurements including research and development items. In addition, PMS requirements shall be developed or revised to cover PMS changes which result when SHIPALTs, ORDALTs, MACHALTs, Field Changes, and other engineering changes are authorized. Development and distribution of other preventive maintenance procedures for ships' use is prohibited.

b. The PMS Coordinating Activities (CA), who are COMNAVSEASYSCOM 04RM designated activities for the oversight of PMS, shall distribute all PMS documentation to ships. No other activities are authorized to distribute PMS documentation to ships.

c. PMS products resulting from other SYSCOM development activities shall be integrated with NAVSEA PMS products into a single complete shipboard PMS package which is distributed by the PMS CAs.

d. PMS documentation shall be reviewed to ensure technical accuracy, incorporation of configuration changes, technical manual changes, changes initiated by technical feedback reports, and improved maintenance procedures. All documentation will be validated prior to distribution to the fleet. Validation will consist of checking the accuracy of the documentation by performing the procedures aboard ship, where practical.

e. PMS procedures should <u>not</u> include the following actions or items:

(1) Watch routines.

(2) Corrective maintenance, except unscheduled maintenance.

(3) Major overhaul of equipment including tear down inspections or repair actions required to be done during an overhaul period. Scheduling of overhaul items may be included.

(4) Facilities or housekeeping maintenance items.

(5) Requirements that are documented by other means, such as underway check off lists, boiler light off procedures, rounds fired logs, and any Operational Sequencing System (OSS) procedures.

(6) Inventory checks such as repair locker check lists.

H-2 RELIABILITY-CENTERED MAINTENANCE (RCM) WAIVER POLICY

a. Maintenance requirements for shipboard equipment and systems shall be developed using the Reliability-Centered Maintenance (RCM) methodology detailed in reference (b). Waivers from developing requirements in accordance with reference (b) may be requested in the following circumstances:

(1) A new maintenance requirement (e.g., MRC) is added to an existing MIP for a system already in PMS;

(2)The new system or equipment maintenance requirement results from a modification or upgrade to a system or equipment that is already included in the 3-M System with valid and current PMS requirements;

(3) The new maintenance requirement applies to a unique system or equipment that is being used on a temporary basis (i.e., being installed on a single hull vice on a ship class).

b. Waiver requests associated with the addition of a new maintenance requirement should include the following information:

(1) Requirement description;

(2) Failure mode (i.e., material condition after failure) the maintenance requirement is intended to prevent;

(3) Description of origination for this new maintenance requirement. This description could include results of INSURV Material Inspection, Navy Safety Center Surface Ship

Safety Survey findings, details of a preventable equipment casualty or performance of routine maintenance. If a reference exists (e.g., TFBR DDG 51 Ser 0051-02, INSURV message 031530Z OCT 02, FTSCPAC Code 307 TAVR message 031530Z OCT 02, etc), identify the reference;

(4) Explanation of how the periodicity of the requirement was determined (e.g., OEM recommendation, MTBF data);

(5) Details of actual failures occurring in the Fleet which this maintenance requirement will prevent, and frequency of those failures;

(6) MIP and MRC information for any current and valid MRC or task that is similar to the proposed requirement;

(7) Additional technical information that might support adjudication of the waiver request.

In addition, a Backfit RCM analysis, similar to that conducted at SHIPMER, should be submitted for each proposed maintenance requirement for which a waiver is being requested. Each Backfit RCM analysis should include a detailed rationale and justification addressing how this proposed task satisfies the Applicability and Effectiveness criteria for the proposed maintenance requirement.

c. Equipment or system modification or upgrade-related waiver requests should include an explanation of the modification or upgrade being implemented and how it will impact the following specific equipment characteristics:

(1) Function
(2) Equipment/system operating parameters
(3) Operating environment
(4) Duty cycle
(5) Materials
(6) Protective devices
(7) Safety features

Equipment or system modification or upgrade-related waiver requests should also include a Backfit RCM analysis for each proposed maintenance requirement for which a waiver is being requested. Each Backfit RCM analysis should include a detailed rationale and justification addressing how this proposed task

satisfies the Applicability and Effectiveness criteria for the equipment as modified or upgraded.

d. Temporary installation waiver requests should include the following equipment and/or system details:

(1) Ship or location of installation
(2) Period of installation
(3) Function
(4) Equipment/system operating paramaters
(5) Operating environment
(6) Duty cycle
(7) Materials
(8) Protective devices
(9) Safety features

H-3 PMS RESPONSIBILITIES AND PROCEDURES

a. The Maintenance Engineering Policy and Knowledge Transfer Division (SEA 04RM) is responsible for COMNAVSEASYSCOM's efforts in managing the development, implementation and maintenance of the Ship's Maintenance and Material Management (3-M) System. Specifically, relative to the PMS responsibility, SEA 04RM will:

(1) Manage, coordinate, and monitor the PMS actions within the NAVSEASYSCOM to ensure compliance with the requirements specified in OPNAVINST 4790.4D and this instruction.

(2) Plan, develop, and implement PMS improvement programs.

(3) Manage the PMS efforts assigned to the PMS CAs.

b. The PMS CAs, when tasked and funded shall:

(1) Conduct technical reviews, standardize and validate MIPs and MRCs to ensure compliance with references (a) and (b).

(2) Deliver and install PMS packages to ships, craft, and other designated commands.

(3) Conduct maintenance liaison with fleet and type commands in implementing, supporting, and adapting COMNAVSEASYSCOM PMS programs to meet fleet requirements.

(4) Provide input to Integrated Logistics Support Planning and ship manning document evaluations as requested by SEA 04RM.

(5) Initiate development for update of PMS for overhauled ships.

(6) Maintain the PMS database and the identity of library PMS documents.

(7) Maintain the PMS Management Information System (PMS MIS).

(8) Provide guidance to maintenance requirement developers to ensure compliance with references (a) and (b).

(9) Maintain records to support audits of response performance for feedback reports.

(10) Forward TFBRs to appropriate Design Activities and/or ISEAs by electronic means.

(11) Perform other PMS support functions as tasked by SEA 04RM.

c. Activities developing maintenance requirements shall ensure that all PMS requirements are included in all provisioning allowance and fitting out procedures and specifications.

d. NAVSEA technical codes and In-service Engineering Activities (ISEAs), when tasked and funded, shall perform the following for systems and equipment under their cognizance:

(1) Develop, review or revise, as applicable, maintenance requirements to ensure their technical accuracy for systems and equipment under their cognizance.

(2) Review and resolve PMS Technical Feedback Reports (TFBRs). Ensure that the procedures of paragraph H-11.2 are followed when responding to PMS TFBRs.

e. Other SYSCOMs with responsibility for shipboard equipment included in PMS, are requested to:

(1) Coordinate PMS requirements with SEA 04RM and provide completed PMS documentation to the PMS CAs for technical review, entry into the PMS data bank and issue to applicable ships in accordance with reference (a).

(2) Provide timely response and resolution to Technical Feedback Reports (TFBRs) for systems and equipment under their cognizance using the procedures of paragraph H-11.2.

H-4 PMS FOR NEW CONSTRUCTION OR CONVERSION SHIPS

a. The Ship Program Manager (SPM) shall:

(1) Ensure development and review of maintenance requirements is completed in accordance with reference (b) using one or more of the following options:

(a) Require in shipbuilding contracts that PMS documentation be developed and provided by the shipbuilder.

(b) Task and fund system and equipment acquisition managers to develop PMS for systems and equipment under their responsibility.

(c) Task and fund the PMS CAs to develop PMS documentation for NAVSEA equipment and systems.

(2) Task and fund the PMS CAs through SEA 04RM to provide technical review, standardization, validation, printing, delivery and installation of a complete PMS package in the ship.

(3) Ensure that approved technical manuals, logistic support analysis, plans for maintenance, and drawings needed to develop PMS requirements are identified and provided to the developing activity 9 months prior to the scheduled PMS installation date to ensure availability of PMS documentation at installation date.

(4) If PMS CAs are not tasked to develop the PMS documentation, the SPM shall ensure that developing activities submit the PMS requirement development to the PMS CAs no later than 6 months prior to scheduled installation date for technical review, standardization, validation and printing to ensure availability of PMS documentation at installation date.

(5) Provide PMS CAs copies of Schedule A lists (government furnished equipment), preliminary equipment

component indexes, and other configuration lists to ensure availability of PMS at scheduled installation date. Where feasible, the configuration data shall be provided in final form no later than 10 months prior to the PMS installation date.

b. NAVSEA 04RM and the PMS CAs shall be responsible, as tasked and funded by the SPM, for the following:

(1) Develop PMS requirements for NAVSEA cognizant systems and equipment.

(2) Perform technical reviews, validate, standardize, and print all PMS documentation developed.

(3) Verify, deliver, and install a complete PMS package in ships.

(4) Provide the SPM the development status of PMS for all ships' systems and equipment.

c. Acquisition managers tasked by the SPM to provide PMS requirements development documentation shall provide the following to the PMS CAs:

(1) A copy of contract or task requiring PMS development.

(2) The identification and nomenclature of ships' systems and equipment and related technical manual numbers.

(3) A list of designated ships on which systems and equipment will be installed.

(4)The date by which PMS documentation is required.

H-5 PMS FOR OVERHAULED SHIPS

a. SPMs shall:

(1) Ensure development and review of PMS requirement development documentation is completed in accordance with one or more of the following options:

(a) Require in overhaul contracts that PMS documentation be developed and provided by the shipbuilder.

(b) Task and fund system and equipment acquisition managers to develop PMS for systems and equipment under their responsibility.

(c) Task and fund PMS CAs to develop PMS documentation for NAVSEA systems and equipment.

b. The PMS CAs shall deliver updated PMS documentation to the ships.

H-6 PMS FOR NEW SYSTEMS AND EQUIPMENT BEING PROCURED BY NAVSEA AND OTHER ACTIVITIES

a. Acquisition managers responsible for systems and equipment requiring scheduled preventive maintenance shall task and fund for development of initial PMS requirements in accordance with reference (b) concurrent with system and equipment delivery. Criteria for waiving requirements of reference (b) for new PMS documentation associated with development, modification or addition to existing PMS is addressed in paragraph H-2. This requirement includes equipment purchased by TYCOMs, ship purchases, and other Commercial Off-The-Shelf (COTS) equipment.

b. Acquisition managers will fund PMS CAs for initial printing and distribution of PMS documentation for new systems. The only activity authorized to distribute PMS documentation to ships are the PMS CAs.

H-7 PMS FOR EXISTING SYSTEMS AND EQUIPMENT IN THE FLEET

SEA 04RM will task and fund the PMS CAs to:

a. Maintain, standardize, print, and distribute the PMS documentation.

b. Provide processing for non-Technical feedback reports and for researching and resolving TFBRs.

c. Maintain the PMS Management Information System (PMS MIS).

H-8 SHIPALTS, ORDALTS, MACHALTS, FIELD CHANGES, AND ENGINEERING CHANGE PROPOSALS

The alteration or change sponsor (SPM, TYCOM, etc.) shall task and fund Life Cycle Managers (LCMs) for systems and equipment to develop new maintenance requirements in accordance with reference (b). If an RCM waiver is approved, they should task and fund revision to PMS documentation to reflect changes in systems and equipment resulting from alterations or changes. The PMS requirements documentation shall be provided to the PMS CAs at least 4 months prior to required PMS documentation delivery date.

H-9 PMS FOR FOREIGN NAVIES (FORMER U. S. NAVY SHIPS)

PMS documentation requests from foreign navies for former U. S. Navy Ships shall be processed as follows:

a. Requests for PMS coverage for foreign navies on former U. S. Navy Ships shall be directed to the NAVSEA Office of International Programs (SEA 63).

b. Upon receipt of a request from a foreign navy for PMS coverage for a former U. S. Navy ship, SEA 63 will request from the appropriate PMS CA the cost and availability of providing a one-time updated PMS package and whether a List of Effective Pages (LOEP) is available for the ship. If the ship's LOEP is not available, then the PMS CA should advise SEA 63 whether another ship's LOEP can be used as a verification document.

c. After receipt of a signed acceptance of the offer, SEA 63 will issue a funding document to the appropriate PMS CA. The PMS CA will provide SEA 63 with a LOEP and instruction for its use within 60 days.

d. SEA 63 is to complete and return the updated verified LOEP package to the appropriate PMS CA.

e. The appropriate PMS CA will deliver a one-time updated PMS package based upon the verified LOEPs within three months after receipt. This updated package will include only data available in the data bank. No new PMS development will be undertaken for equipment not having PMS coverage. Continuing PMS support will be provided if funded by SEA 63.

H-10 PMS FOR FOREIGN NAVIES (NEW CONSTRUCTION, MODERNIZATION, OVERHAUL, AND CONVERSION)

The USN Program Manager (PMs or SPMs) responsible for the specific foreign navy effort will provide funding to initiate new, or modify existing PMS documentation in accordance with the procedures described herein for USN ships. The Program Manager shall be the sole authority for PMS requirements on cognizant foreign ships.

H-11 PMS TECHNICAL FEEDBACK REPORTS

TFBR are to be used for reporting technical deficiencies or errors in PMS documents. Technical PMS discrepancies that could have a detrimental effect on personal safety, safety of ship, or could result in significant equipment damage, are classified as "Urgent." All other TFBRs are classified as “Routine.”

a. The central control points for processing TFBRs are the PMS CAs. Depending on the type and level of technical authority necessary to answer the TFBR, PMS CAs will either respond to the originator with a resolution, or forward the TFBR to the appropriate technical authority for their action. The PMS CAs will enter all TFBR information in the PMS MIS for tracking and control purposes.

b. Naval Sea Systems Command Activities. Design Activities, ISEAs, or other activities under the direction of the Naval Sea Systems Command holding technical authority for systems and equipment shall take appropriate action on all TFBRs under their cognizance, forwarding responses to the PMS CAs. Responses will be electronically transmitted to the appropriate PMS CA. The PMS CAs will record the TFBR result in the PMS MIS and provide the final response to the originator.

c. Other Systems Command Activities. Design Activities, In-Service Engineering Agents (ISEAs), or other activities under the direction of other Systems Commands (SYSCOMs) holding technical authority for systems and equipment are requested to take appropriate action on all TFBRs under their cognizance forwarding responses to the PMS CAs. Responses will be electronically transmitted to the appropriate PMS CA. The PMS CAs will record TFBR results in the PMS MIS and provide the final response to the originator.

H-11.1 TFBR Procedures

a. Urgent TFBRs.

(1) Urgent TFBRs are those feedbacks reporting technical discrepancies that can result in personnel injury, risk to the safety of the ship or significant equipment damage.

(2) PMS CAs shall provide a message response to all Urgent TFBRs informing the originator of specific actions and required changes that will result from TFBR evaluation or forward the TFBR to the appropriate Design Activity or ISEA within 1 working day of receipt. This message response shall be addressed to the originator and distributed to TYCOMs. TYCOMs will forward this message to all commands that could be affected by PMS change. The Urgent TFBR response message may recommend pen and ink changes to the affected PMS requirement.

(3) If the PMS CAs forward the TFBR to a Design Activity or ISEA for resolution, than the Design Activity or ISEA shall provide a message response to all Urgent TFBRs informing the originator of the specific actions and required changes that will result from the TFBR evaluation within 1 working day of receipt. This message response shall be addressed to the originator and distributed to TYCOMs and PMS CAs. TYCOMs will forward this message to all commands that could be affected by the PMS change. The Urgent TFBR response message may recommend pen and ink changes to the affected PMS requirement.

(4) PMS CAs shall distribute revised PMS documentation to affected users within 30 calendar days of receipt via special issue or Advance Change Notice (ACN).

b. Routine TFBRs.

PMS CAs shall perform technical review, research and provide a response to routine TFBRs where resolution does not require technical authority action. TFBRs that PMS CAs cannot resolve will be sent to the cognizant Design Activity or ISEA. The cognizant Design Activity or ISEA will provide the response to the appropriate PMS CA. The response shall describe the action taken. The PMS CAs will provide the response to the originator by electronic means. Distribution of the revised MRC to the originator and other affected users will be accomplished via the next Force Revision (FR). COMNAVSEASYSCOM has established a goal of providing answers to all TFBRS in one day. While it is

realized that some TFBRs will require more extensive research, the majority of TFBRs received can and should be answered in one day.

c. Special Issues.

If revised PMS documentation is determined to have safety considerations, or the Design Activity or ISEA funds the PMS Program Oversight Manager, then the PMS CAs will prepare and distribute a PMS Special Issue to all holders of the affected PMS documentation.

d. Changes to RCM-based MRCs require the Design Activity or ISEA to:

(1) Modify the original RCM Corporate History data to reflect the justification for the MRC change.

(2) Provide technical justification for changes to the PMS CA as part of the response to the Feedback Report. The Feedback Report response with the change and justification/rationale will then become part of the RCM Corporate History.

H-11.2 PMS Technical Feedback Response Instructions

All PMS Technical Feedback Reports shall be answered using the guidelines in paragraph H-11.2.1.

a. For concurrence response:

(1) If PMS documentation must be changed, the revision information shall be provided to the appropriate PMS CA by electronic means. NAVSEA 04RM approved software may be used to make revisions to PMS documentation, but the use of this software should not delay the response to the appropriate PMS CA.

(2) If no revision to PMS documentation is required provide pertinent comments in the response to the appropriate PMS CA.

b. For non-concurrence responses. When not concurring with the feedback report, the rational for non-concurrence must be given.

c. The response shall be electronically provided to the appropriate PMS CA with any applicable corporate history changes and revised documentation.

H-11.2.1 Critical Review Questions for PMS TFBR Review

The following questions shall be considered in the response to all TFBRs.

a. What is the Sailor's question or problem?

b. Is the MRC necessary?

c. What failure mode(s) does the MRC prevent or detect?

d. Is the MRC clear and easy to follow?

e. Is the MRC safe for the Sailor to accomplish?

Check to see that the Sailor is protected from falls, chemicals, asbestos, sewage, high voltage, rotating machinery, pressurized fluids or gases, poisonous gases, and that two-man protection is specified when necessary. If required, is the use of protective clothing, safety glasses or hearing protection specified?

f. Is the equipment being maintained within the boundaries of the applicable guidelines for selection and use of lubricants and hydraulic fluids for use in Shipboard Systems?

g. Have you specified the correct number of Sailors, skill level, and man-hours required to accomplish this task?

h. Is the periodicity such that it represents the absolute minimum necessary to achieve the inherent level of reliability?

i. What would be the effect on the equipment if the MRC was accomplished less frequently? Not accomplished at all?

j. For test maintenance actions, what is proven by this test?

k. Does this action lead towards standardization of MRCs for similar equipment?

l. Did you answer the Sailor's question?

H-11.3 PMS Advance Change Notice Guidance

A PMS Advance Change Notice (ACN) is authorization for changing a MRC or addition of a new MRC. An ACN is also a record of change to a MRC or addition of a new MRC. An ACN is issued in the format of a Maintenance Requirement Card suitable for attachment to the MRC to which it applies. An ACN can be issued to advise ships to annotate MIPs.

a. PMS documentation changes typically promulgated by ACNs include:

(1) Increase or decrease periodicity to change the interval between maintenance actions.

(2) Delete or modify an existing maintenance requirement.

(3) Addition or modification of an MRC procedure note to clarify the context or description of a procedure step.

(4) Change a procedure step to correct maintenance technical data, e.g., frequency, pressure, voltages, current, decibels, resistance values, clearance, test data, etc.

(5) Addition, deletion or modification of existing procedure steps which significantly improve the technical accuracy of the MRC.

(6) Addition or change of tools, parts, materials and/or test equipment that significantly improves PMS performance.

b. Distribution and Control of ACNs

(1) A PMS ACN shall refer to a specific MIP and MRC. A new MRC page shall be provided for each MRC page affected by the ACN.

(2) Each PMS ACN shall be serialized. The serial number will consist of the originating activity code, log number (if appropriate), MIP number, MRC control number, and date.

(3) The PMS CAs shall maintain accountability of all outstanding ACNs by Maintenance Index Page (MIP)/Maintenance Requirement Card (MRC). When revising and distributing affected MIP, the revision shall include annotation of applicable ACNs.

H-12 PMS Workload Increase and Waiver Policy

a. Any revision to PMS requirements resulting in an increase in workload, or denial of a request to change periodicity that would reduce workload, requires the Design Activity or ISEA to obtain SEA 04RM approval. Upon concurrence, SEA 04RM will forward the response to the cognizant PMS CA. PMS Workload Increase Waivers should be requested in the following circumstances:

(1) A change is made that increases the performance frequency of a current and valid MRC (e.g., changing a Quarterly maintenance action to a Monthly maintenance action). A valid MRC is one generated using reference (b) or vetted by Backfit-RCM methodology;

(2) The Procedures on a current and valid MRC is either modified or task steps are added that results in additional workload;

(3) A current and valid MRC is added to a MIP that does not currently contain that MRC.

b. PMS Workload Increase Waivers are not required when:

(1) New equipment, with current and valid PMS, is installed in a ship when that equipment and its corresponding maintenance are identical to that installed on other ships or stations;

(2) The MRC workload information is updated to more accurately reflect actual time required to perform the MRC.

c. PMS workload waiver requests should include an explanation of the change being implemented and the following information:

(1) MRC or task description;

(2) Failure mode (material condition after failure) the MRC or task is intended to prevent;

(3) Description of origination for this new maintenance requirement. This description could include results of INSURV Material Inspection, Navy Safety Center Surface Ship Safety Survey findings, details of a preventable equipment casualty or performance of routine maintenance. If reference

exists, (e.g., TFBR DDG 51 Ser 0051-02, INSURV message 031530Z OCT 02, FTSCPAC Code 307 TAVR message 031530Z OCT 02, ISEA PMS review, etc) identify the reference;

(4) How the new requirement (i.e., revised periodicity, new procedural step, new maintenance requirement) was determined;

(5) Details of actual failures occurring in the Fleet which this revision to the current maintenance requirement will prevent, and frequency of those failures;

(6) Provide MIP and MRC information for any current and valid MRC or task similar to the proposed, modified, MRC or task;

(7) Any additional technical information that might support adjudication of the waiver request.

In addition, for waiver requests associated with increases in maintenance periodicity or changes to existing MRC procedures (paragraph a.(1) and a.(2) above), a Backfit RCM analysis, similar to that conducted at SHIPMER, should be submitted for each proposed maintenance requirement. Each Backfit RCM analysis should include a detailed rationale and justification addressing how this proposed task satisfies the Applicability and Effectiveness criteria for the proposed maintenance requirement.

MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

APPENDIX I

ALTERATION MANAGEMENT

APPENDIX I

REFERENCES

REFERENCE	INSTRUCTION NO.	SUBJECT
(a)	OPNAVINST 4720.2 SERIES	FLEET MODERNIZATION PROGRAM (FMP) POLICY
(b)	SL720-AA-MAN-010/020	FLEET MODERNIZATION PROGRAM MANAGEMENT AND OPERRATIONS MANUAL
(c)	NAVSEA TECH SPEC 9090-700 Series	SHIP CONFIGURATION AND LOGISTICS SUPPORT INFORMATION SYSTEM (SCLSIS)
(d)	NAVSEAINST 4720.15 Series	MACHINERY ALTERATIONS (MACHALTS) ON HM&E EQUIPMENT AND SYSTEMS

ALTERATION MANAGEMENT

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ALTERATION MANAGEMENT

1-1 PURPOSE

This Appendix describes how planned alterations are incorporated into the 3-M system. It is intended as a guide for understanding the process and assist in annotating the required Maintenance Data System (MDS) documents resulting from an alteration to a vessel, its systems, and/or equipment as described in other sections in this manual.

The Fleet Modernization Program (FMP) provides the policy and procedures used to manage alterations for individual hulls based on scheduled ship availabilities. The FMP is supported by the Navy Data Environment – Navy Modernization (NDE-NM) database. References (a) and (b) are the FMP policy and procedure documents. Reference (b) details the process along with participants responsibilities in supporting the automated system (NDE-NM).

The Type Commander (TYCOM) directs the accomplishment of D, F and AER (Alteration Equivalent to Repair) alterations after the NAVSEASYSCOM Ship Program Manager (SPM) has approved the alteration, assigns priorities, monitors and controls the alteration progress while Fleet Units must provide accomplishment feedback through the OMMS-NG/SNAP process. The CNO and NAVSEASYSCOM perform these functions for K and KP alterations. It is the responsibility of the SPM, TYCOM and/or Accomplishing Activity to maintain the installation schedule and completions in the NDE-NM database.

1-2 DEFINITIONS

a. Applicability - A technical review and examination was conducted and the alteration was made applicable to a specific ship or ships. This does not mean that the alteration will be programmed on the ship. The Ship Alteration Record (SAR), AER and Equipment Alteration shall provide applicability information that shall also be reflected in NDE-NM.

b. Alteration - Any change in the hull, machinery, equipment, or fittings which involves a change in design, materials, number, location, or relationship of an assembly’s component parts whether the change is separate from, incidental to, or in conjunction with repairs.

c. Alteration-Equivalent-To-Repair (AER) – An Alteration-Equivalent-To-Repair (formerly known as a Letter AER for Surface Ships, an Alteration and Improvement (A&I) for Submarines, and an Alteration Request for Aircraft Carriers) is a permanent alteration formally approved by the SPM, typically via letter, which has one or more of the attributes described in TYCOM Alterations (see paragraph I-2 p.) and all of the following criteria:

(1) It does not impact Battle Force Interoperability (BFI).

(2) It does not impact the ship's stability records (weight and moment).

(3) It does not impact or alter the 3-dimensional footprint of the equipment it is replacing.

(4) It does not impact shipboard distributive systems (i.e., water, ventilation, electrical, power), their SSR or interfacing equipment or systems; compartmental arrangement records; or Damage Control records.

(5) It does not impact Manpower and Personnel.

All AERs require SPM technical approval. Non-military improvements may be approved and authorized for accomplishment by the cognizant SPM.

The following procedures will be followed if the SPM's internal review determines that the proposed AER should be accomplished as a SHIPALT (Title "F", "D", "KP", or "K") or is already under development as a SHIPALT:

(1) An AER can be a prerequisite to a SHIPALT such as Title "F" and "D" SHIPALTs. In this case, information relating to the development of the SHIPALT will be included in the body of the AER recommendation letter. Additionally, it should be stated that ILS products affected will be covered during the SHIPALT development and execution.

(2) AERs can be accomplished in place of SHIPALTs where an emergent requirement of limited applicability dictates. In this case, the body of the recommendation letter shall state that the Planning Yard (PY) shall prepare the AER installation procedures.

(3) If a proposed AER is required until the accomplishment of a SHIPALT, the AER recommendation will

identify the SHIPALT and its estimated completion date. All detailed procedures, material requirements and ILS requirements will be excluded from the letter.

d. Authorization – Empowers a command to direct a specified alteration to be accomplished.

e. Approval - An action of the cognizant SPM signifying the accomplishment of an alteration is technically feasible. Evidence of "Approval" is the signature of the SPM on the Ship Alteration Record, AER or TEMPALT.

f. Equipment Alteration – Any alteration, other than a SHIPALT, in the configuration of an equipment or system (including embedded equipment, computer programs and expendable ordnance) after establishment of the product baseline. An Equipment Alteration involves a change in design, type of material, quantity, installed location, logistics, supportability, or the relationship of the component parts of an assembly within the ship. Equipment Alterations include the addition, deletion, rework, or replacement of parts, assemblies or equipment; or changes in assembly procedures. Alterations to associated computer programs include the incorporation of different computer program versions and approved modification or corrections to both operational test and maintenance programs. Equipment Alterations are initiated by approved Class I Engineering Change Proposals (ECPs). Equipment Alterations apply equally to changes installed in delivered systems and equipment, and changes installed in systems and equipment in production to identify differences from an established product baseline. Equipment Alterations may be initiated to correct a design defect, to change equipment operational capability, to eliminate safety hazards, to update obsolete components, or for any combination of these reasons. There are four types of Equipment Alteration (Engineering Change, Field Change, Machinery Alteration and Ordnance Alteration) that are defined below.

(1) Engineering Change (EC) – A modification, usually to Under-Sea Warfare (USW) equipment or systems, or other equipment groups as designated by the cognizant Systems Command, Program Manager (PM),Participating Acquisition Resource Manager (PARM), and Configuration Control Boards (CCBs).

(2) Field Change (FC) – A mechanical, electronic or electrical change, modification or alteration made to electronic equipment after delivery to the government or installation on board ship, including software changes, which does not impact interfaces to other equipment within the ship, change the footprint, form or fit, change power, weight, or air

conditioning requirements. If power, weight or air conditioning requirements are modified, the modification must be discussed with the appropriate SPM, who will decide whether to proceed with the modification as a Field Change or SHIPALT. Field Changes are initiated and approved by the cognizant Headquarters Systems Command and are implemented by Field Change Bulletin (FCB). Alteration Installation Teams (AITs) or Ship's Force can accomplish FCs. For these specific types of alterations, the cognizant SPM shall be notified of the approved changes affecting their respective platforms, shall be periodically advised of installation status and shall be notified of any logistics upgrades, which have been completed as a result of the alteration.

(3) Machinery Alteration (MACHALT) - A planned change, modification or alteration of any Hull, Mechanical or Electrical (HM&E) equipment in service (shipboard or shore activities) when it has been determined by the MACHALT Configuration Control Board that the alteration or modification meets all of the following conditions:

(a) Can be accomplished without changing an interface external to the equipment or system.

(b) Are modifications made within the equipment boundary or is a direct replacement of the original equipment system.

(c) Can be accomplished without the ship being in an industrial activity.

(d) Can be accomplished individually, not conjunctively with a SHIPALT or other MACHALT. If power, weight or air conditioning requirements are modified, the modification must be discussed with the appropriate SPM, who will decide whether to proceed with the modification as a MACHALT or SHIPALT.

(4) Ordnance Alterations (ORDALTs) - Changes made to ordnance equipment or their computer programs by the addition, deletion, rework, or replacement of parts, assemblies or equipment, or by a change in assembly procedures.

g. Fleet Modernization Program (FMP) – The Fleet Modernization Program (FMP) provides a structure for the orderly identification, approval, design, planning, programming, budgeting, installation, life cycle support and configuration control of military, technical, and survivability improvements to all ships of the active and reserve fleets. An "improvement"

is an enhancement to a ship that increases its capability or reliability to perform its assigned mission.

h. Forces Afloat Accomplishment - The SHIPALT shall be accomplished by ship's force and/or IMA for shipboard installation.

i. Industrial Activity - Any activity that has the capability to perform all aspects of work on ships. These activities generally include Naval Bases, Naval Ship Repair Facilities (NSFRs), Intermediate Maintenance Facilities, Trident Refit Facilities (TRFs), public (Naval) shipyards and private shipyards that hold Agreements for Boat Repair (ABR) or Master Ship Repair (MSR) Agreements in accordance with the NAVSEA Supervisor of Shipbuilding, Conversion and Repair (SUPSHIP) USN Operations Manual.

j. Levels of Maintenance

(1) Organizational (Shipboard) Level Maintenance - maintenance that is the responsibility of ship’s force for accomplishment.

(2) Intermediate Level Maintenance – ship’s maintenance that is normally performed by Navy personnel on board tenders, repair ships, Shore Intermediate Maintenance Activities (SIMAs), aircraft carriers, and fleet support bases.

(3) Depot (Shipyard) Level Maintenance – ship’s maintenance that is performed by industrial activities. Depot level maintenance requires major overhaul or a complete rebuilding of parts, assemblies, subassemblies, and end items, including the manufacturing of parts, modifications, testing, and reclamation.

k. Package SHIPALT - (P) is assigned to those SHIPALTs being prepared under the Package SHIPALT Program. SHIPALTs under this program must meet the following basic criteria:

(1) The material, plans, installation instructions, spare parts, technical data, etc., are pre-packaged by an industrial facility for specific ships suitable for installation by forces afloat or AIT. As part of the package, only nominal technical assistance will be provided at the time of installation.

(2) All funds to support preparation of Package SHIPALTs, including technical assistance (except for Special Program Material), are FMP funded.

l. Ship Alteration (SHIPALT) – An approved permanent change to the configuration of a ship that is documented as a SHIPALT Record (SAR) and implemented through the FMP Process. SHIPALTs are classified by title/type and comprise any change in hull, machinery, equipment, or fittings that involves changes in design, material, quantity, location, or relationship of the component parts of an assembly. Note: Other alterations which modify shipboard systems such as ordnance alterations, electronic field changes, air alterations, and special project alterations are not considered SHIPALTs, but may require conjunctive SHIPALTs where systems interface changes are involved.

m. SHIPALT Title – The title assigned to a SHIPALT identifying the approving authority and responsibility for funding. SHIPALT titles are:

(1) Title “D” – A permanent alteration that does not affect the military characteristics of a ship. It is formally approved by the SPM in the form of a Justification/Cost Form (JCF) and a SHIPALT Record (SAR). It may require Centrally Provided Material (CPM) but does not require Headquarters CPM (HCPM). A Title “D” SHIPALT may specify whether it should be accomplished only by a depot level maintenance facility. They generally include more efficient, cost effective designs that improve ship maintainability, and meets one or more of the TYCOM Alteration attributes described in paragraph I-2 p. TYCOM Alterations.

(2) Title “F” – A permanent alteration that is formally approved by the SPM in the form of a JCF and a SAR. It does not require Centrally Provided Material (CPM) or Headquarters CPM and is within the ship’s force capabilities for accomplishment, however, it may be accomplished by a Fleet Maintenance Activity (FMA). It must also meet one or more of the TYCOM Alteration attributes described in I-2 p. TYCOM Alterations.

(3) Title “K” – A permanent alteration to provide a military characteristic, upgrade existing systems or provide additional capability not previously held by a ship, which affects configuration controlled areas or systems of a ship or which otherwise requires the installation of Headquarters Centrally Provided Material (HCPM). These SHIPALTs are approved for development and authorized for accomplishment by the CNO (military improvements) or the Hardware Systems Command (HSC) (non-military improvements). The technical approval for Title “K” SHIPALTs is provided by COMNAVSEASYSCOM.

(4) Title “K-P” – A Title “K” SHIPALT which is within forces afloat or Alterations Installation Team (AIT) capability for accomplishment, and for which required special program and centrally provided materials are provided as a package by the cognizant Hardware Systems Command (HSC).

n. Temporary Alteration (TEMPALT) – Any alteration that provides given capabilities on a temporary basis (not to exceed one year or one operational deployment in duration) in support of Research, Development, Test and Evaluation (RDT&E) or exercise or mission requirements. TEMPALTs are reviewed and technically approved by the cognizant Ship Program Manager (SPM) and authorized for accomplishment by the cognizant TYCOM. The SPM review considers safety, technical adequacy, impact on ship stability, operational characteristics including warfare capability, damage control, ship structure, ship services, ships interfaces, and habitability. Alterations intended to be installed for a period in excess of one year or one operational deployment shall be considered a permanent change to a ship’s configuration and shall be accomplished as a SHIPALT accordingly. After completion of testing requirements, mission or exercise support requirements or one year, whichever comes first, TEMPALTs must be removed and the ship restored to its previous configuration. The activity sponsoring the accomplishment of the TEMPALT shall be responsible for funding the removal of the TEMPALT and the restoration of the ship.

p. TYCOM Alterations – TYCOM Alterations are approved by the SPM for accomplishment as a Title “D” or “F” SHIPALT or AER depending upon the scope and effects of the change. TYCOM Alterations are programmed for installation by the TYCOM, as well as funded for accomplishment by the TYCOM or other organization as agreed upon. TYCOM Alterations are maintenance alterations normally accomplished to improve reliability or maintainability. A TYCOM Alteration is a technical alteration that has one or more of the following attributes:

(1) The use of different materials that have been approved for similar use and such materials are available from standard stock.

(2) The replacement of obsolete, worn-out or damaged parts, assemblies or components requiring renewal by those of later and more efficient design which has been previously approved by the SPM and such replacement does not cause a change to the systems or equipment normally associated with the military characteristics of the ship.

(3) The strengthening of parts that require repair or replacement in order to improve reliability of the parts and of the unit, provided no other change in design is involved.

(4) Minor modifications involving no significant changes in design or functioning of equipment but considered essential to prevent recurrence of unsatisfactory conditions.

(5) The replacement of parts, assemblies or equipment with like items of later or more efficient design where it can be demonstrated that the cost of the installation and maintenance of the new parts, assemblies or components is less than the cost of maintaining the installed parts, assemblies or components, and such replacement does not cause a change to the existing system design or affect any interfacing system design and does not effect a change to the systems of equipment normally associated with the military or technical characteristics of the ship.

(6) The proposed alteration is an inspection or documentation change requiring no equipment modification, but requires a vehicle to monitor accomplishment.

1-3 ORGANIZATIONAL RESPONSIBILITY

Responsibility for alteration management is required at various levels of command. Command responsibilities include:

1-3.1 Naval Sea Systems Command

As the managing agent for the FMP program, COMNAVSEASYSCOM provides a major input into the NDE-NM database from MDS reports. The NDE-NM records and tracks authorized configuration change requirements and status. Specific alteration management responsibilities for the managing agent are:

a. Maintain and update the NDE-NM database, requesting reports from fleet commands per reference (b) when the 3-M database cannot supply the required information.

b. Ensure NDE-NM transactions and supporting information is available to applicable TYCOMs. Data should include:

(1) MDS OPNAV Form 4790/2K information concerning all SHIPALTs, including ORDALTs. This excludes NAVSEA-08 alterations.

(2) Programmed status for all SHIPALTs and AERs.

(3) Plans, material, and package availability status for all SHIPALTs and AERs.

(4) Priorities for planned Amalgamated Military/Technical Improvement Plans (AMTs).

(5) Estimated man-days to complete.

(6) Estimated material costs (latest).

(7) Estimated total cost to complete.

(8) Fiscal year planned.

(9) Returned total cost this alteration.

(10) Plans availability code.

1-3.2 TYCOMs

The TYCOMs are responsible for alteration management within their force. Responsibilities include:

a. Assign priorities to alterations:

(1) For Title "K" alterations, review the NDE-NM and recommend changes of priorities to CNO.

(2) For Title "D" and "F" alterations and for TYCOM Alterations, assign the priorities of precedence for installation.

b. For the TYCOM Mandatory Priority List, identify for CNO the planned installation year and assigned priority for Title "F" SHIPALTs. This information is subsequently displayed in the NDE-NM database.

c. Check the NDE-NM Alteration Management data by verifying that:

(1) The information recorded is supported by corresponding SARs.

(2) Applicabilities are assigned and correct.

(3) Programmed status is assigned.

d. Document the following information (if desired) for local processing and control:

(1) Material, plans, and Package SHIPALT availability.

(2) Alteration cost estimates.

(3) Priorities for accomplishment.

e. For TYCOM Alterations maintain the following information in NDE-NM:

(1) Type Availability (T/A), and TYCOM Screening Code.

(2) Priority, if desired.

(3) Designated planning activity, if desired.

(4) Designation to add to applicable ship CSMP file.

(5) Planned installation year, if desired.

f. Monitor alteration management reports to ensure accuracy, including monitoring of the transaction and error reports.

g. Provide direction to the supporting data processing activity concerning the production and distribution of alteration management reports.

h. Take appropriate action when transferring alteration management files and reports to another command. This requires that both TYCOMs maintain the same alteration management master records.

i. Issue instructions to:

(1) Provide for advanced planning for alterations.

(2) Assign planning activities.

(3) Report return cost of alterations.

(4) Assign parent IMAs, if applicable.

(5) Transfer files from one command to another.

(6) Provide for the routine correction of alteration files.

j. Provide information on problems, and solutions in alteration completions reported by an IMA to all other concerned activities.

1-3.3 Fleet Units

The Commanding Officer is responsible for the expeditious completion of all alterations authorized for the ship. Ship alteration management responsibilities are:

a. Audit for accuracy alteration management reports and MDS Transaction and Error Identification Reports containing alteration information. Report required corrections to the TYCOM.

b. Ensure that the applicable Ship Alteration Record or similar document is provided to the ship for all alterations programmed in the execution year.

c. Submit OPNAV Form 4790/CK, or electronic version following installation of alterations. See Section I-Chapter 3 of this manual for detailed instructions and Appendix B for details of specific blocks.

d. When reporting alteration status changes:

(1) Ensure the remarks section (Block 12) of the configuration change record (OPNAV Form 4790/CK) expressly states the work that remains to be completed on partially completed alterations.

(2) Ensure that all of the configuration data required by Section I-Chapter 3 is reported on the configuration change record (OPNAV Form 4790/CK).

(3) Ensure that OPNAV Form 4790/2K for partial alterations are completed.

1-4 ALTERATION PROCESS

The alteration process begins when the Systems Commands (SYSCOMs) forward alteration documents and data, which interface with MDS, to the TYCOMs. These documents authorize the accomplishment of alteration requirements and configuration changes to components or systems installed on ships or installed at shore activities. The TYCOMs review and modify the data as necessary before forwarding the alteration data on to the appropriate units, or designated activity that will process the data into the Ships' 3-M System. Specific procedures for processing alteration data from the NDE-NM into 3-M are contained in reference (b) and TYCOM instructions with a summary provided in the following sections.

All alterations scheduled for accomplishment must be in the ship's CSMP. This is the entry point for the alteration data into the 3-M System. Some of these alterations require extensive logistic support while others may be limited to, for example, a wiring change in a circuit. For each type/category of alteration a unique alteration prefix has been assigned as an identifier. Authorized alteration categories and associated prefixes are:

Prefix	Alteration Category
SA	Ship Alteration
OA	Ordnance Alteration
FC	Field Change
AR	Alteration Request
BA	Boat Alteration
MA	Machinery Alteration
SI	SYSCOM Command Instruction
EC	Engineering Change
HI	Habitability
TY	TYCOM Direction
TD	Technical Directive
SP	Strategic Systems Project Office Alteration
SC	Service Change
TR	Trident Alteration
EP	Engineering Change Proposal
MO	CRYPTO Equipment Modification

In addition to configuration changes made during corrective maintenance and reported as required by Section I Chapter 3, preplanned equipment modernization must be authorized prior to the exchange by the responsible SYSCOM. When a component supported by the Coordinated Shipboard Allowance List (COSAL) is

replaced by a component with different repair part requirements, but meets the same equipment design specifications, the appropriate SYSCOM must authorize the exchange. The SYSCOM must also authorize exchanges of components replaced by non-supportive components.

1-4.1 Alteration Management 3-M Reporting Requirements

For FMP managed alterations requiring logistic support, the 3-M documentation provided by the SYSCOM will have the Work Center, Job Sequence Number (JSN), and structured Alteration Number pre-assigned. These identifiers are used for tracking the life cycle of the alteration. This information is reported through the 3-M system as a configuration change. Refer to Section I Chapter 3 for additional information on configuration reporting.

If the issuing authority does not provide the formatted 3-M WC/JSN and Alteration number, the ship will assign the JCN. The structure of the alteration number is left to the reporting activity, except for the first two positions that must have an authorized alteration category prefix. Note that reference (c) contains additional types of configuration changes that are not applicable to 3-M reporting.

1-4.2 Ship's Force Requests for Configuration Changes

Ship's Force requests for Configuration Changes not covered by applicable alterations shall be submitted as TYCOM directed (refer to the TYCOM instruction). The request should be in the ship's CSMP prefixed by the authorized alteration category "AR".

1-4.3 Departure From Specification

When a component supported by the COSAL is replaced by a component with different repair part requirements but meeting the same specifications, the appropriate SYSCOM must authorize the exchange. Written communication is usually by Departure From Specifications (DFS) or Liaison Action Request (LAR) and subsequently documented by a completed Configuration Change Request (CCR). The CCR would identify the removal of the component by Record Identification Number (RIN). The replacement (Installed) component would require assignment of a new RIN and Logistic Support Documentation (LSD) by the Configuration Data Manager (CDM).

1-4.4 Certification of Shipyard Installed Alterations

The Naval Supervising Activity (NSA) provides a certification of alteration installations to the recipient ship when the alterations are accomplished by the shipyard. This certification includes the work center, JSN assigned to the alteration, and the Final Action Taken. The certification will be in the format shown in Figure I-1. The ship shall endorse the shipyard's certification letter and forward to the supporting activity managing the unit's Master CSMP. The endorsement provides authorization for information transmitted to be processed as completed deferrals in the Master CSMP. Refer to Figure I-2. This eliminates the need for documenting multiple configuration changes (OPNAV Form 4790/CK) to close the CSMP deferral. Configuration changes made by the depot in accomplishing the alterations are reported separately from 3-M.

1-4.5 Automated Data Process Between 3-M and SCLSIS

Ships' 3-M automated programs are designed to accept applicable data for file, sort, and display. The alteration information is automatically passed from the Ships' Configuration and Logistics Support Information System (SCLSIS)Configuration Data Manager’s Database – Open Architecture (CDMD-OA) to automated ships via the Automated Shore Interface process. For additional information on SCLSIS CDMD-OA and the ASI process refer to reference (c). Similarly, the MDS information may be transferred to a ship's Current Ship's Maintenance Project (CSMP) via the Master Job Catalog when authorized for accomplishment.

The communication link and interface procedures for processing 3-M and NDE-NM files, and CSMP file processing are contained in reference (b) and TYCOM instructions.

The procedures for adding alteration records to the Master Job Catalog (MJC), and distributing these changes to the TYCOM operating sites are contained in Appendix C and TYCOM instructions.

(ACTIVITY LETTERHEAD)

4720
Ser/Orig. Code

Date
From: (Originating Activity)
To: Ship's Name

Subj: CERTIFICATION OF ALTERATION INSTALLATIONS DURING AVAILABILITY (include date range of availability)

1. The following alterations are certified installed. The listed alterations meet the requirements of the issuing agency as instructed, and include all required Logistics Support Documentation.

3-M WC/JSN	ALTERATION NO.	DESCRIPTION	A/T
(For example only):			
DXSA 0054	SADDG 00045 K	MISSILE LAUNCH INSTL	5B
EXSA 3994	SADDG 01003 K	SSTG INSTL	5B
EXSA 4007	SADDG 01675 K	HPAC RPLCMNT	5B

By direction

Signature block

Copy to:
(Cognizant TYCOM)
COMNAVSEASYSCOM (Cognizant Code)

Figure I-1 Sample Certification of Alteration Installation

(SHIP'S LETTERHEAD)

4720
Ser/Orig. Code
Date

FIRST ENDORSEMENT on NSY ltr 4720 Ser/Orig Code of (Date of ltr)

From: (Ship's Name)
To: (Supporting Activity, e.g., IUC, RSG, etc,)

Subj: CERTIFICATION OF ALTERATION INSTALLATIONS DURING AVAILABILITY (include date range of availability)

Request the alterations reported completed by basic correspondence be processed as completed deferrals in the Master CSMP.

By direction

Signature block

Copy to:
(Cognizant TYCOM)
COMNAVSEASYSCOM (Cognizant Code)

Figure I-2 1st Endorsement to Alteration Certification Letter

MAINTENANCE AND MATERIAL MANAGEMENT (3-M) MANUAL

APPENDIX J

RELIABILITY-CENTERED MAINTENANCE CERTIFICATION PROGRAM

APPENDIX J

RELIABILITY-CENTERED MAINTENANCE
CERTIFICATION PROGRAM
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APPENDIX J

RELIABILITY-CENTERED MAINTENANCE CERTIFICATION PROGRAM

J-1 PURPOSE

To institutionalize Reliability Centered Maintenance (RCM) methodology for Navy maintenance managers and engineers tasked with development, revision and approval of maintenance requirements. This Appendix is directed at technical activities, contractors and engineers involved in answering TFBRs and designing new PMS documents.

J-2 CERTIFICATION LEVELS

RCM Certification is aligned along three levels to meet the distinctly different maintenance responsibilities that exist. Individual certification level levels include:

J-2.1 Level I Certification

Level I Certification addresses responsibilities of individuals tasked to develop, review, or approve changes to current maintenance tasks.

J-2.2 Level II Certification

Level II Certification applies only to those individuals responsible to develop, review, or approve PMS task requirements on new systems or equipment.

J-2.3 Level III Certification

Level III Certification is designed for a very select group of senior In-Service Engineers (ISEs) selected by their commands to teach Level I RCM Certification courses at their In-Service Engineering Agency and to provide a local RCM subject matter expert.

J-3 ORGANIZATIONAL RESPONSIBILITY

Responsibility for RCM Certification is as follows:

J-3.1 Naval Sea Systems Command (NAVSEA):

As RCM Certification Program managing agent, NAVSEA is responsible for all aspects of the certification program. Specific responsibilities include:

a. Maintaining certification records;

b. Establishing RCM Certification curriculum;

c. Administering Level II and III courses as required, including recertification;

d. Monitoring of Level I courses;

e. Monitoring maintenance engineering tasks to ensure only certified individuals are assigned responsibility to develop, review or approve scheduled maintenance requirements; and

f. Administering testing requirements including maintaining test question and answer data bases for all RCM Certification levels.

J-3.2 In-Service Engineering Agencies (ISEAs) & Fleet Technical Support Centers (FTSCs)

ISEAs and FTSCs are responsible to:

a. Maintain sufficient Level I certified personnel to develop, review, or approve changes to current scheduled maintenance tasks;

b. Maintain sufficient Level II certified personnel to develop review and approve new PMS task requirements;

c. Nominate and assign sufficient Level III certified personnel to conduct Level I RCM Certification courses as required; and

d. Ensure all contractors who develop new PMS tasks participate in the RCM Certification Program.

J-4 RCM CERTIFICATION PROCESS

RCM Certification training comprises three elements:

a. Formal Instruction to develop a fundamental understanding of RCM methodology;

b. Application of principles to enrich the fundamental understanding of RCM principles and to demonstrate the practical application ; and

c. Testing to assess student knowledge and ensure an adequate level of qualification prior to certification.

J-4.1 Level I “Navy Backfit RCM for Practitioners” Course

Required attendees include ISEs and FTSC Commodity Specialists who develop, review, or approve changes to current maintenance tasks.

Location: ISEA sites.

Periodicity: As required to satisfy certification and recertification requirements.

Purpose: Tailored to cognizant systems and equipment of the host ISEA, each 2-day Level I course focuses on fundamentals necessary to apply the Navy Backfit RCM process to current maintenance tasks. Level I certification is dependant upon successful completion of a written examination administered by NAVSEA. In order to remain proficient, recertification is required every 3 years.

Recertification may be accomplished in one of two ways:

a. Successful completion of a Navy Backfit RCM for Practitioners exam; or

b. Successful participation in a SURFMER session.

All ISEs and Commodity Specialists who have completed a SURFMER session since January 1999 are granted initial Level I certification as of the completion date of their last SURFMER training session. Recertification, as discussed above, is required 3 years from completion of the qualifying SURFMER session.

J-4.2 Level II “RCM for PMS Developers” Course

Required attendees include ISEs tasked with development of, review or approval authority for new PMS task requirements. Contractors with similar responsibilities will also be required by language in acquisition contracts to attend.

Location: As designated by NAVSEA 04RM.

Periodicity: Quarterly or as required.

Purpose: Each 5-day RCM for PMS Developers course focuses on application of Classic RCM as defined in MIL-P-24534A (Navy). Fundamentals taught during this course are necessary to apply RCM principles to the development of PMS tasks for new systems and equipment. Final Level II certification is dependent upon successful completion of a written practical examination administered by NAVSEA. Recertification is required every 3 years.

Recertification is accomplished by successful completion of an RCM for PMS Developers certification exam.

J-4.3 Level III “Navy Backfit RCM for Trainers” Program

Required attendees include senior In-Service Engineers.

Location: As designated by NAVSEA 04RM.

Periodicity: Annually or as required.

Prerequisites: Successful completion of Level I *and* Level II certification requirements.

Purpose: The 10-day Navy Backfit RCM for Trainers course serves two functions:

a. To increase the Level III students’ foundation and understanding of RCM theory and methodology; and

b. To train senior ISEs in the techniques needed to effectively teach RCM principles and methodology.

Level III certified ISEs are authorized to provide Level I certifications training to personnel at their parent agencies and other ISEAs that do not have Level III certified individuals. Successful *completion* of the Level III course is dependent upon passing a written exam in RCM theory and

practical exercises. *Certification* is dependant upon successful completion of the Level III course *and* successful completion of a NAVSEA monitored practice teaching session typically 2 to 3 months after completion of the Level III course.

Recertification is required *annually* and may be accomplished in one of two ways:

a. Successful completion of a NAVSEA monitored practice teaching session; or

b. Successful completion of the Navy Backfit RCM for Trainers examination.